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"The Ethical Physician." *

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In prefacing my discussion of this subject with the observation that "the practice of regular medicine is a profession and not a trade," I anticipate that some of my hearers may entertain the idea that such an introduction is entirely superfluous. To such I desire to emphasize my opinion that if there is any idea which deserves to be kept constantly before the profession's mind immediately following that which reads: "the love of humanity," it is, "yours is a **profession**, not a trade." The hope of reviving this sentiment in the breasts of some of my brethren, and stimulating its discouraged moments with the faithful, has prompted this effort.

At the outset, let us note some distinctions. Trade is occupation for a livelihood; a profession is a service of humanity. A trade is an occupation which any one may enter. None can enter the professions who are not well prepared. A trade may be taken up temporarily and relinquished for another when a better presents itself. A man must be identified with his profession for life. A trade makes one the rival of every other tradesman. A profession makes co-operators of all colleagues. Trade knows only the law of success; the ethics of the professions bind their members by the indissoluble ties of sacred honor.

*Read before the Etowah County Medical Society.

The lax medical laws of this country, which have made possible the admission of thousands of men of sordid and mercenary motives, rather than pure and lofty professional ideals, have rendered imperative the adoption of a general system of ethics defining the duties and regulating the conduct towards each other of the members of the regular or organized medical profession. "Every member of the profession is of course supposed to be a gentleman, actuated by a lofty professional spirit, striving to do right and avoid wrong; and were there no written ethics, the majority would naturally as gentlemen and as members of an ancient, dignified and honorable profession, conform to the laws of honor as each understood them."

To harmonize the diversity of opinions, which different constructions and individual conceptions of duty of necessity gave rise, made the adoption of the Principles of Medical Ethics as promulgated by the American Medical Association in 1847, necessary, and which from then until now has instructed and governed our profession, protecting the good and restraining the bad. All physicians are supposed to own a copy of this code, to have studied its contents and to be familiar with its requirements. "The moral claim it has upon us rests not upon any obligation of personal friendship towards our professional brethren, but upon the fact that it provides for every relation, contingency and occasion, and is founded upon the broad basis of justice and equal rights to every member of the profession—the pole-star, directing all who wish to pursue an honorable course. Being founded on the highest moral principles, its precepts can never become useless until regenerate and infallible human nature makes both medical codes and the Ten Commandments unnecessary."

No better code of moral principles can be found anywhere, and its faithful observance by the majority of our honorable members in all ages, has been due to the binding together and elevation far above ordinary vocations of the medical profession and the esteem and honorable standing of our members; (2) their duties to each other, and lastly of its own members of its dignity and honor is entertained. I challenge any man to show me a community whose physicians are not respected and well remunerated, and where the profession is not held in high esteem whose physicians are maintaining the dignity and honor of their profession, avoiding as becomes gentlemen, bickerings, backbiting and

slander, co-operating with the true, scientific spirit, and accepting fees in keeping with the value of services rendered.

I regret that the time of the society will not permit my taking up each article and section of this fundamental law of our organization and dealing with it to the length its importance justifies, but in this paper I shall confine myself to (1) the moral requirement and honorable standing of our members; (2) their duties to each other, and lastly the question of pecuniary acknowledgements from their patients. The sacred obligation to maintain the honor of the profession is set forth in the following language in article 1, chapter 2:

Section 1. Every one on entering the profession and thereby becoming entitled to full professional fellowship, incurs an obligation to uphold its dignity and honor, to exalt its standing, and to extend the bounds of its usefulness."

The importance of moral purity is so clearly and fully discussed in chapter 2, section 1, that I can hope to do no better than reproduce the exact words here:

"There is no profession from the members of which greater purity of character and higher standard of moral excellence are required, than the medical; and to attain such eminence is a duty every physician owes alike to the profession and to his patients. It is due to the patients, as without it their respect and confidence cannot be commanded; and to the profession, because no scientific attainments can compensate for the want of correct moral principles. It is incumbent upon physicians to be temperate *in all things*, for the practice of medicine requires unremitting exercise of a clear and vigorous understanding; and in emergencies for which no physician should be unprepared, a steady hand, an acute eye, and an unclouded mind are essential to the welfare and even the life of a human being."

While many see in this admonition unquestionable reference to licentiousness, alcohol and drug addictions, they are prone to overlook its wider application: producing unnecessary or criminal abortion, advice for avoiding pregnancy. Profanity, obscenity and vulgarity of any form or degree are almost equally detracting from the high moral plane, and therefore ethical eminence we are so earnestly exhorted to attain and maintain.

Articles 7 and 8 of the same section advise us "that it is incompatible with honorable standing in the profession to resort to public advertise-

ment or cards inviting the attention of persons suffering with disease, to promise radical cures, or to publish cases or operations in the public prints, or to suffer such publications to be made. Consequently such frequent notices as we see in our papers, indirectly advertising some physician by reference to his opinion or statement of the condition of so-and-so, or his being called to such-and-such a place on professional business, or the presence of so-and-so at Dr. Smith's Sanitarium, or the progress day by day of so-and-so at Dr. Smith's Sanitarium, are in direct violation of the spirit of this section, in that it is only indirectly employing the methods of the charlatan.

Section 8 of this article characterizes as highly reprehensible and derogatory to professional character for a physician to hold a patent on any medical or surgical appliance or medicine, to accept rebates or commissions, to dispense or promote the use of secret remedies or to certify to their efficacy. The most ignoble and contemptible, as well as the most flagrantly dishonest of these, is undoubtedly the accepting of commissions on prescriptions. Should such a bribe taker salve his horny conscience with the assurance that it is honest from a business standpoint, he cannot escape the conviction that it is little and mean, and the simple fact that he attempts to conceal his bargain from his patients and professional brethren is convicting evidence of his disregard of moral and ethical principles. The mention of secret remedies suggests many proprietaries as well as so-called patents which physicians are employing in steadily increasing numbers and which are not only a reflection on the intelligence of the physician and prostituting to his office as a selector and combiner of remedies to suit individual cases and destroying the usefulness of the pharmacist as his compounder, but it is also contributory to the great twentieth century evil of self medication and endless repetition of prescription refilling. I can name a dozen, and perhaps a score upon reflection, of proprietaries whose indiscriminate employment by physicians have introduced them to the laity with the result that they now purchase their anti-kamnia, bromidia, etc., over the counter and give the overburdened pocketbook of the physician a rest as well as depreciate his professional attainments. The reckless employment of ready made formulas is inconsistent with the principles of medical science and the notoriety which such use sooner

or later must give all of them will surely not serve either to "exalt the standing of the profession" or "extend the bounds of its usefulness" in our community.

In regard to our duties to each other, I invite your attention first to section 4 of article 4 which follows: "A physician ought not to take charge of or prescribe for a patient who has been under the care of another physician in the same illness, except in case of sudden emergency, or in consultation with the physician in attendance, or when that physician has relinquished the case or has been dismissed in due form. The privilege which another physician would have in the case of sudden emergency here cited can only be construed as meaning the inability of the regular attendant to reach the case as soon as the urgency, real or imaginary, as the situation may demand, in which case not only the demands of humanity, but professional courtesy should impel your services. Your right and jurisdiction over the case ceases, however, immediately upon the arrival of the regular attendant or the removal of the hindrance to his ability to take charge, and any effort on the part of the temporary attendant to usurp the previous attendant's place is highly reprehensible and unethical. In taking charge of a case which has been relinquished by another physician, or from which he has been properly dismissed, section 5 of the same article admonishes us to be particularly careful to make no insinuations regarding the previous attendant or his course of treatment. The frequency with which we hear the laity state that Dr. So-and-So said he could have saved the patient if he had only been called a few days or hours earlier, or that it was luck that he was called just at that time or a few more hours or days and it would have been too late, is a shameful reproach to the fraternal feeling which we profess one towards the other. If you conscientiously believe that the course of treatment previously followed was illogical, or even positively detrimental, preserve a dignified silence and permit yourself no further comment than that you will do your best. If you follow this course you need not fear that you will fail to receive all honor in the event of a fortunate termination of the case, and if unfortunate or fatal, that the responsibility will not rest on you in the eyes of those most interested. This will insure the friendship of your professional brother whom you superceded, the gratitude of those interested and the unfeigned admiration of the best people of

the community. Oh! you who have never pursued any other plan than that of maligning your brother, try this nobler way one time, if for no other reason than as a safe financial investment or to witness the expressions of pleasant surprise on the faces of those around the bedside, who have prepared themselves for your volley of abuse and caustic criticisms of the previous attendant or treatment, and experience that inward feeling of calm and satisfaction as you drive on and as you pass and repass your brethren; albeit, I do not question but an easy conscience would keep some physicians awake at night who had never before suffered with insomnia!

Every physician should make it one of his unvarying rules, when called to a patient or asked to assume charge of one, to ask the simple and direct question: "Have you been under the treatment of any other physician in this illness?" If the answer be "yes," ascertain at once whether he has relinquished the case or has been dismissed before making an examination. If he has not, state positively that it is one of the invariable rules of regular physicians that this requirement be first complied with. Rest assured that the proper respect for your own laws will inspire the same respect on the part of the public and your professional reputation and financial worth will be enhanced just in proportion as you proclaim yourself by proper observance of this rule, one of the honorable and high-toned members of your class.

Bear in mind, however, that we are often deceived by patients or those seeking to employ us for others in this matter, and be careful not to indulge in unjust accusations against a brother who has apparently unjustly usurped your place until you have first satisfied yourself by a personal interview that he knowingly and wilfully disregarded your rights. When the latter is true, you should in every instance report the matter fearlessly to your medical society which should officially pronounce his conduct unethical and reprimand, suspend or expel such an one, if he be a member, from the society. Such suspension or expulsion should debar him from consultation with members of the society, and any member guilty of extending him consultation or other professional courtesies, should be adjudged also guilty of unethical conduct and be amenable to the society for his act. Should the first physician not be a member of the society, the report should be made as in the first case and all members warned against extending consultation or other professional courtesies under the same penalty as stated in

the first instance. In my judgment the adoption of such a resolution as this is imperative, if we would enjoy the protection which the Code of Ethics is supposed to guarantee.

Another point upon which the minds of many physicians seem to require occasional refreshing, is their duty when called in company with others in cases of emergency. Section 7 of article 4 plainly sets forth that when several physicians are thus summoned, the first to arrive is by courtesy the attending physician *pro tem.*, and is to be so regarded by others arriving after him, and these should promptly retire upon seeing him in attendance unless especially requested by him to remain. The first physician to arrive should consider his duty and jurisdiction promptly at an end upon the arrival of the previous attendant, and should as promptly retire, unless especially urged by the regular or previous attendant to remain. This same rule obtains with regard to obstetric attendance as covered by section 10 of article 4, and no amount of solicitation on the part of family or friends should deter the emergency physician from promptly and unhesitatingly relinquishing the case to the previous attendant upon his arrival. In either case the emergency physician is entitled to the usual fee for the service rendered, but never to subsequent management of either case until the previous attendant has been formally and regularly dismissed.

In this connection I desire to state that in my judgment it is little short of piracy in any physician to suggest or urge the dismissal of a previous attendant in order to secure control of the case. The earnest solicitation of your services is your only excuse for alluding to this ethical requirement. Also be careful never to express a regret at the existence of this or any other rule of ethics, but by your ready and strict compliance inspire the admiration of the public for your respect for your professional brothers' rights under the code of an honorable and dignified profession, and incidentally will maintain your own self respect.

This brings me to my last heading—Pecuniary Acknowledgements or Fees. My right to discuss this phase of my subject in a paper dealing with ethics may be questioned by a few hyperesthetical if not hyperethical brothers, but when you reflect on the frequency with which it leads to disturbance of professional harmony among ourselves and the

resultant effect on the community, we cannot refuse it consideration. "The principle of commercial competition which is accepted in other departments of human industry, has been held by the learned professions of all ages and countries as dishonorable and degrading. In the medical profession especially it has always been regarded as in the highest degree disreputable for physicians to seek to acquire popular reputation and to attract practice by offering as an inducement "cheap fees." Public opinion in civilized countries has always highly estimated and liberally compensated medical services and will continue to do so, so long as the members of the profession equip themselves to deserve liberal compensation and estimate a service of humanity above manual occupation. Consequently a physician who offers his services at degrading rates either does not entertain the proper regard for an honorable profession, or, feeling his incompetency, honestly hesitates to ask or accept the legitimate compensation of brains and skill.

Section 3 of article 6 of the code gives us the following instructions: "Some general rules should be adopted by the physicians in every town or district relative to the minimum pecuniary acknowledgement from their patients; and it should be deemed a point of honor to adhere to these rules with as much uniformity as varying circumstances will admit."

Thus, while we may not as a medical society under the laws of our state association formulate or adopt a fee bill, it is plainly incumbent upon us as ethical physicians to act outside this society upon this question of minimum fees for services rendered. We are prohibited as medical societies from dealing with this matter for two reasons. First, because the financial finds no place in the objects of *organization* of either state or county societies. Secondly, its regulation by societies would leave free to do as they choose those who for various reasons remain without the restraining influence or regulating power of their county or state organizations. It therefore follows that to meet the ethical requirements and at the same time preserve our loyalty to the ordinances of the State Association we must adopt a harmonizing expedient. This brings us face to face with the subject of a business organization for the physicians of each town or community. That such an organization independent of our medical society is strictly ethical

and morally right, no sane man can question in the light of the article just quoted, and the possibility of such an organization being considered a "medical trust" as I have heard it characterized by so-called independent physicians is too remote to entitle it to serious consideration. This is an era of organization and even our sister professions, the law and ministry, have found it necessary. Scores of such local organizations of the medical profession have been accomplished in the United States in the past few years and so successful has the plan proven that they are increasing rapidly. The report from numerous organizations which I have seen, indicates that the double result has been accomplished of securing understanding and harmony among the physicians and elevating their professional and financial standing in the communities where they exist. We took a long stride in this direction when we took the united stand against cheap life insurance examinations, and this is probably as far as we can properly go as a medical society, but the start has been made and the vast majority of our physicians by their pledges in this one question have shown their desire to maintain the dignity of their profession by refusing degrading remuneration for the product of scientific training. The threadbare chestnut, with which the public everywhere assails us, that "doctors are poor business men" is a reflection upon our intelligence and the only possible way to erase this idea from the minds of the laity and consign it to the oblivion it deserves at the hands of a trained set of men and hold our honorable calling above the dust and **grime** of cheapness is the organization suggested. Our society also took a great step in this direction which was entirely within the ordinance of the State Association, when we adopted the resolution that it should be considered unethical for any member to engage in any form of medical practice which was not endorsed by the State Association; and here I wish to reproduce the interpretation which the Judicial Council of the American Medical Association, and which is copied from our Book of Rules, puts upon section 3 of article 6 which I have already read: "That the principle laid down is inconsistent with all contracts or agreements, to attend individuals, families, companies or associations or institutions, other than those of strictly charitable character, for a specified sum per month or year without regard to the amount of services that may be required in the time

specified, no one can reasonably doubt. It seems to us equally inconsistent with the ethical rule to enter into a contract with a manufacturing company to attend their employes, or with a school to attend its patrons or scholars, for a fixed sum, to be derived from a levy of a percentage on the wages of employes or tuition of pupils; for however plausible may be the humanitarian idea of securing for the employes or students adequate medical attendance when sick at the small average cost, the practical working of the system violates both the rule that compensation for medical services should be in accord with the kind and amount of services rendered, and that every individual and family should be free to choose their own medical attendant without dictation or indirect restraint."

I do not question but that all will agree that the ethical aspect of this problem should form the basis of its settlement. Such agreement being reached, you must admit that no ethical physician should engage in any form of practice whereby he may take undue and unfair advantage of his brother.

And now we have on the one hand physicians professing to be ethical offering unlimited services to individuals or families at a rate per month of one-half what they ask of others for a single visit, or contracting with a corporation to pay them ten to twenty-five cents per hand or employe as commission to hold for them the other seventy-five to ninety per cent. from many, even against their expressed will and desire. But so eager is the company to add the commission to their earnings that some of them will discharge any employe who resents the robbery. On the other hand we have the physician who attends hundreds of day laborers, poor clerks, farmers and others whose incomes are never above and often below that of the contracted employes who are supposed to get first-class and unlimited attendance for a month at half the price the last named physician asked per visit if he would be considered ethical by his brethren. I am willing to submit this to any fair minded and disinterested judge with my opinion that it not only represents unfair advantage over the private practitioner, but also unjust discrimination against a large percentage of our patrons.

"Physicians who are mercenary enough to sell their services at a wholesale price to be retailed at a profit in commissions by a corporation

should be reclaimed and strengthened by the help and encouragement of their stronger brethren. In this effort we should be impelled not solely by the desire to increase the income of the profession but to maintain the dignity of our profession, to uphold the authority of its ethics, and to vindicate its ancient honor; in a word, to prevent the degradation of an honorable profession into a mercenary trade."

And now, in closing, let me state that the foregoing represents my candid, honest views on the subject. If I am wrong, correct me. If my statements are correct, then it behooves us to take immediate steps to remedy the situation. Better a crust and a clear conscience, than the ambrosia of the gods, with the ever present conviction that we are prostituting an honorable profession and taking unfair advantage of our brethren. Better medical societies with a membership of twenty-five per cent. of the present number, than the rolls crowded with names which spell only commercialism and selfishness. Better a little handful of the faithful with the love and reverence of their noble profession indelibly stamped upon their daily acts and reflected in their daily conduct towards their brethren and towards the public, than a great roster full of the names of many whose only claim to regularity and professional respectability is the fact that their names appear on the secretary's book and their dues are paid. God grant us the early arrival of the day when through the awakening of its individual members to their solemn duties and sacred privileges, the medical profession may show forth rehabilitated in the spotless garments of our honorable and dignified forefathers. Then and only then can the medical fraternity of today hope to re-enter the lists as a worthy companion to the other great liberal professions, the legal and the theological.

References—

The Physician Himself (Cathel).

The Book of Rules.

Stovaine Spinal Anaesthesia.

*By Gaston Torrance, M. D., Surgeon to St. Vincent's Hospital,
Birmingham, Ala.*

While in Europe last fall, it was my privilege to see stovaine used by a number of well known surgeons and gynecologists.

In England, Mr. Moynihan, of Leeds, and Mr. Barker, of London, both use it. Mr. Barker has used it in a number of cases at the University Hospital and expressed himself as being pleased with results.

Mr. Moynihan told me that he was using it in old men for the removal of the prostate by the suprapubic route, where he was afraid to give a general anaesthetic.

In Paris, Tuffier and Faure have both had considerable experience in spinal anaesthesia. I saw Dr. Faure using stovaine at Hospital Tenon, in vaginal operations. He told me that he was not using it in abdominal surgery, but did not hesitate to use it where he wanted a quick, safe anaesthetic.

Prof. Kocher did not use it during my visit to his clinic in Berne.

Prof. Kronig, of Freiburg, was one of the most enthusiastic advocates of stovaine spinal anaesthesia that I met in Germany. He has used it in more than a thousand cases, and I believe has not had a death that could be justly charged to stovaine. His method of administration is most careful. The patient is given scopolanin 0.0003 grm., and morph. sulph. 0.01 grm. hypodermatically two hours before operation. Plugs of cotton are put in the ears, and the patient's eyes are bandaged. After the needle is introduced, an inverted Y shaped glass tube is attached and the spinal fluid allowed to rise in the long arm of the tube, and the intraspinal pressure noted. The syringe holding the stovaine solution is attached to the other short arm and the stovaine is slowly forced through into the spinal canal. One minute is allowed for the introduction of the fluid, and when the needle is removed, the spinal fluid in the long arm of the tube is thrown out; that much fluid is removed from the spine which equalizes the pressure. Prof. Kronig uses stovaine made by Billon of Paris, of the following formula:

STOVAINE BILLON.

Borate d'Epirene	0.00013
Stovaine	0.04
Chlorure de Sodium	0.0011

Each tube is hermetically sealed and holds enough to anaesthetize an adult for about an hour and a half.

Prof. Doderlein of Tübingen uses practically the same methods as Prof. Kronig. He was using Reidel's preparation of stovaine.

Prof. Von Rosthorn, of Heidelberg, is using stovaine exclusively in his clinic, both for abdominal and plastic work.

In Munich I saw it used by Prof. Schmidt and Prof. Klein. Both expressed themselves as being pleased with it.

Prof. Zweifel, of Leipsic, was using novocain, and said that he was better pleased with it than with stovaine. I saw him do a number of abdominal sections, and in nearly every case there was marked nausea which interfered, to some extent, with the operation.

Prof. Israel, of Berlin, is using stovaine and tropococain in his clinic. Stovaine is used also in Von Bergman's clinic.

Under New and Non-Official Remedies. The Journal of the American Medical Association of December 1, 1906, gives the following description of stovaine. (Benzoyl—ethyl—dimethylaminopropanol hydrochloride.) "It is prepared by causing a reaction of benzoyl chlorid on the α -dimethyl-amino-pentonal-b, which is itself the product of reaction of ethylmagnesium chloride on methylaminoacetone.

It crystalizes in small, brilliant scales, which melt at 175°C (347 F). It is extremely soluble in water and easily in methyl alcohol and acetic ether, but requires 5 parts of absolute alcohol for solution, and is only slightly soluble in acetone.

It is quite stable and its solutions may be sterilized at 115°C (239 F) without suffering decomposition.

The aqueous solution is slightly acid to litmus, neutral to methyl orange. It is precipitated by all the alkaloidal reagents, and is decomposed by even very dilute alkalies.

It is incompatible with alkalies and all alkaloidal reagents.

Actions and Uses.—Stovaine acts as a local anaesthetic of about the same power as cocaine, but dilates the blood vessels, whereas cocaine contracts them and exerts a tonic action on the heart. It is only 1-3 to 1-2 as toxic as cocaine.

It is used as a local anaesthetic; while most reports are favorable, one case of gangrene has been reported following the use of 10 per cent solution.

Dosage.—Internally, 0.002 gm. (1-30 grain) as pill. Locally, it may be used in the eye in 4 per cent. solution, and applied to other mucous membranes, as in laryngology, in from 5 to 10 per cent. solution. For hypodermic injections for local anaesthesia, it can be used in 0.75 to 1 per cent. solution.

My personal experience with stovaine has been limited to a few cases. I have adopted the following methods in using it:

The patient is prepared the night before, as for a general anaesthetic. The field of operation and the lumbar region both being scrubbed and a wet antiseptic poultice applied.

Two hours before operation scopolamin gr. 1-100, with morphine sulph. gr. 1-4 is given by hypodermic. The ears are plugged with cotton, and colored glasses put on the patient.

I use Kocher's 5 c. c. glass syringe with needle 3 1-2 inches long, which I had made in Berne after his pattern.

When ready to give the stovaine, the patient is allowed to sit on the side of the table with his feet on a chair, elbows resting on his thighs. The back is again scrubbed, using permanganate and oxalic acid. Sterile towels or laparotomy sheets are wrapped around the patient. My gloves, syringe and needles to be used for the anaesthesia are boiled separately. The neck of the flask or tube holding the stovaine is broken and the fluid drawn up into the syringe before the puncture is made.

A line drawn from the crest of one ilium to the other posteriorly crosses the body of the fourth lumbar vertebra. The needle should be introduced just above the line between the third and fourth lumbar vertebrae about 2-5 of an inch to one side of the median line to avoid the strong interspinous ligaments which, in some cases, deflects it. (Bardeleben.) The needle will enter from 1 4-5 to 2 4-5 inches, and should carry a wire, which completely fills its cavity, to prevent plugging with the skin or tissues. The wire should be withdrawn just before reaching the dura, and the needle slowly introduced, until the

spinal fluid begins to flow. Usually a few drops are allowed to escape, and then the syringe is attached and the plunger slowly withdrawn, allowing 1 c c of the fluid to mix with the stovaine solution; then the fluid is slowly forced out, taking one minute for its introduction into the spinal canal. After the needle is withdrawn, a sterile gauze pad is applied to the puncture with adhesive. The patient is allowed to sit up for two minutes more, and is then generally ready for the operation to begin.

The anaesthesia usually lasts about an hour and a half. In the Heidelberg Clinic the patient is immediately put in the Trendelenburg position, and I saw no bad effects from it during the time I spent there.

Case I. W. W., male, age 35, admitted to St. Vincent's Hospital Jan. 11, 1907, with intestinal obstruction of a week's duration. He had vomited a great deal, and had marked distension.

After being thoroughly prepared, scopolamin gr. 1-100, with morph. sulph. gr. 1-4, was given two hours before operation. A bandage was applied over his eyes, and plugs of cotton put in his ears.

The stovaine was given and the operation begun as soon as he laid down and the field of operation could be prepared.

The whole of the small intestine was removed from the abdominal cavity, and careful search made for the obstruction, which proved to be a freely movable flap of peritoneum behind the illium just where it joins the caecum. This pocket was closed with cat gut sutures, and the appendix being thickened and inflamed, was removed.

A large portion of the bowel was much distended, and of a bad color, but resection was out of the question on account of the patient's condition. The abdomen was closed with drainage.

During the operation, there was absolute insensibility to pain. The abdominal muscles were well relaxed. There seemed to be less hemorrhage than with a general anaesthetic. Respiration was normal. The pulse averaged about 100, and was of good volume. There was practically no shock. There was no vomiting. The patient asked for and was given a glass of water before being removed from the table.

He was just on the verge of fecal vomiting when brought in, and I believe it would have been precipitated had we given ether.

After being put back to bed, he was cheerful and seemed to be in quite as good condition as before the operation.

No purgatives were given. Morphine, atropia and strychnine were given by hypodermic, and salt solution by enema, every three hours. Small quantities of cold water were allowed by mouth. He perspired freely, and in twenty-four hours had a slight movement of the bowels. The following day the bowels moved freely, and to all appearances was making a good recovery except for a continuous temperature of 101 F due to a low grade of peritonitis from extension through the distended and discolored portion of the bowel. This continued with no decided elevation of temperature until the 8th day, when he died of exhaustion and peritonitis.

Post mortem this portion of the bowel was found matted together and had perforated, but there was no free fecal material in the general peritoneal cavity.

Case II. Mrs. B., age 43. Was admitted to St. Vincent's Hospital Jan. 13, 1907. About a year previous I had removed her appendix and left ovary under ether, and she was very much nauseated for a week and dreaded taking the ether again, and was much pleased with the idea of having the spinal anaesthesia used. No morphine and scopolamine was given, as morphine has always produced severe nausea.

The following morning, after having had the preparation used in the previous case, stovaine was injected into the spinal canal and the anaesthesia was complete at the end of three or four minutes, and I proceeded to open the abdomen in the median line to one side of the old incision. On opening the abdomen, some adhesions were found between the small intestine and abdominal wall, and the dissection and suturing over of these denuded surfaces prolonged the operation considerably. I did a supravaginal hysterectomy, and removed the right ovary. The operation lasted one hour and twenty minutes. The last ten minutes, she began to complain of pain, and especially in the closure of the peritoneum. The wound was closed in tiers with chromic

catgut, and Mechel's clamps were used to close the skin. She joked with the nurse all during the operation, and showed practically no shock from being conscious. I used the Trendelenburg position. There was no nausea following the operation, and on the whole, she was very much more comfortable than after the previous operation. The heart's action and respiration were not affected by the anaesthesia. As in the previous case, the abdominal muscles were well relaxed and there seemed to be less hemorrhage from the incision than is usually seen in a general anaesthetic.

Case III. Mrs. L., age 32, admitted to St. Vincent's Hospital Jan. 8, 1907, and the following morning scopolomin gr. 1-100 with morph. sulph. gr. 1-4 was given two hours before operation, and the stovaine given as in the previous cases. After opening the abdomen and dissecting up the tubes (double pyosalpingitis), it became necessary to give ether, as she was very nervous and hysterical. After getting her under ether, she was placed in the Trendelenburg position, but her respiration became very shallow and she had to be raised up by inverting the table. Strychnine was given hypodermically, and the operation was finished without difficulty, and her breathing continued good. The abdomen was closed as in the above case, with a small Mikulicz drain in the pelvis. The head of the bed was slightly elevated, and the strychnine was given every three hours during the following night. She made an uneventful recovery.

Case IV. L. D., age 23, admitted Feb. 12, 1907, to St. Vincent's Hospital, with double pyosalpingitis, with the uterus retroverted and bound down by a mass of adhesions. Scopolomin gr. 1-200, and morph. Sulph. gr. 1-8, given by hypo. two hours before, and repeated just before being brought to the operating room.

The stovaine was used and an attempt made to begin the operation, but as she was hysterical and nervous and insisted upon being put to sleep, I was forced to give her ether, notwithstanding the fact that the anaesthesia seemed to be fair.

I did Von Rosthorn's operation, doing a complete hysterectomy, and passing a drain out through the vagina and sewing the peritoneal flap

from the anterior surface of the uterus to the brim of the pelvis, and to the rectum, completely shutting off the raw and oozing surfaces in the pelvis from the general peritoneal cavity, i. e., making a new floor to the peritoneal cavity.

She made an uneventful recovery and was sent home at the end of two weeks.

The Diagnosis of Non-Tubercular Diseases of the Lungs and Pleura.

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In a twenty minute discussion of a subject as broad as this, one is confined to general considerations.

Classification of Pulmonary and Pleuritic Diseases:

1. The Acute and Chronic Inflammations, with their sequellae.
2. Tubercular diseases.
3. Carcinoma, Sarcoma, Actiniomyocoses, Syphilis, etc.

In this discussion the third class, owing to their rarity, are not considered.

STRUCTURES.

First, large, medium and smaller bronchial tubes; second, bronchioles; third, air cells; fourth, blood vessels; fifth, connective tissue; sixth, the pleura.

MORBID CHANGES IN LUNGS.

1. Different degrees and areas of solidification caused by exudation, degeneration or transformation of normal tissue into more or less degenerated masses, atelectasis, connective tissue proliferation and compression.

*Read before Jefferson County Medical Society.

2. Cavities; tubercular, necrotic, gangrenous, tubular—cylindrical and saculated—and emphysematous.
3. Emphysema, hypertrophic and atrophic.
4. Tubular narrowing or occlusion, caused by muscular contraction (bronchioles), swelling or exudate on the mucosa, and foreign bodies.
5. Fluids in tubes, air cells and connective tissue (serum, mucus, pus, blood).
6. Narrowing, occlusion and rupture of blood vessels, and congestion.
7. Hyperplasia of connective tissue.

MORBID CHANGES IN PLEURAE.

1. General, or circumscribed hyperaemia; exudation, great or small; thickening, adhesions.
2. Pleuritic cavity—general or circumscribed obliteration—by adhesions; or more or less filled with sero-fibrinous, fibrinous, sero-sanguinolent, purulent fluids or blood, air, or air and fluids, generally pus.
3. Various granulomata, particularly tubercular growth, with their secondary and tertiary changes, etc.

These sundry morbid entities or conditions may all, or nearly all, be caused by tuberculosis, or by non-tubercular diseases. Therefore, the lesion itself considered alone and apart from other data, neither establishes nor excludes tuberculosis.

These lesions are discovered by the employment of physical diagnosis, which is the application of physical methods—inspection, mensuration, palpation, percussion, auscultation and succussion—for the purpose of observing or eliciting physical signs which denote physical condition. In other words, certain physical conditions, e. g. cavity or consolidation, give certain signs in response to the above methods, whatever may be the essential pathological process.

Generally speaking, these signs are modification of form, size, symmetry, movement; respiratory, vocal and percussive sounds, in their intensity, duration, pitch or quality, one, two, three or all; vocal fremitus; development of adventitious sounds—rales, thrills, etc. In all of these there is a normal standard, with limited normal variation from this standard.

The following law may be enunciated, to-wit: *The diagnosis of a lesion per se does not differentiate its pathological nature—tubercular or non-tubercular.*

In arriving at the diagnosis of the essential pathological process, the differentiation involves the following:

1. Family, personal and clinical history.
2. The site, area, and order of development of existing lesions.
3. Macroscopic and microscopic phenomena,

Applying these principles to chronic bronchial and parenchymatous diseases of the lung there is very little difficulty in differentiating tubercular and non-tubercular diseases. The stage of tubercular disease, its activity or passivity, that is to say, its spread, its onset, its obsolescence or its disappearance can also be differentiated as a rule. To illustrate: A clinical history of general decline; loss of weight; evening febrile temperature; night sweats; fast pulse; dry cough, or with moderate expectoration; slight dyspnoea, especially on exercise; with symptoms of dyspepsia, or intermittent fever; or hemoptysis; and with the following physical signs, depression under one or both clavicles; or above one or both clavicles; or depressions in both places upon one or both sides; diminished movements; increased fremitus; slight dulness, possibly merely an elevated pitch, with shortened duration and diminished intensity; broncho-vesicular respiration and increased vocal resonance at these points; one or all; the diagnosis of chronic pulmonary tuberculosis in its first stage can be safely made. If in addition to these signs there is a crepitant rale, the clinical diagnosis is complete. If these symptoms become more and more severe, the physical signs of consolidation more and more pronounced and the area greater and greater in extent, we know there is progress in the disease. The activity of the disease can be determined by the rapidity of the further development of these symptoms and signs. Then there is a change. The symptoms are more pronounced, the fever and general appearance is hectic in type, and the physical signs are still greater, depression, diminution of movement, with the occurrence of cracked-pot or amphoric resources, amphoric respiration and egophony announcing the liquefaction of the caseous mass, its discharge into a bronchus and the formation of cavity. Or the symptoms may improve and finally disappear; the physical signs becoming less and less distinctive; finally with the exception of depression and diminished movement, with perhaps new signs denoting a circumscribed emphysema, disappear, all showing a healed tuberculosis by cicatrization. Or the symptoms may

improve and finally disappear, the physical signs showing a circumscribed area of consolidation remaining, showing obsolescence or arrest in the progress of the disease. Or cavity having formed, the tubercular spread may cease, the cavity being wholly pyogenic, which may in time cease altogether leaving a non-secreting cavity, which in turn may contract and ultimately heal, or leave a sinus of Larnnec.

The differentiation of chronic pulmonary fibrosis, fibroid pneumonia, cirrhosis, etc., as the condition is variously denominated into tubercular and non-tubercular, is far more difficult. Indeed, without a clear history of the case, the bacilli are demonstrated, the differentiation is impossible. A history of old chronic pleurisy, of protracted convalescence following acute lobar-pneumonia, especially if the fibrosis is confined to one lobe, with marked pulmonary retraction and rather pronounced bronchiectasis, the general condition of the patient being fair, the probable non-tubercular nature of the disease is established. Both forms are usually unilateral, especially the non-tubercular.

Inhalation fibrosis, that is coal, metal, dust, ect., is bilateral, and can generally be easily differentiated by the personal and clinical history of the case. This is a condition of moderate degree in practically all old coal miners. When there is chronic bronchitis and bronchiectasis in these cases there is always more or less pronounced symptoms and the question of tuberculosis is at hand.

When the original heterogeneous nidus is in some other portion of the lungs than the apices the differentiation is far more difficult. Generally speaking, however, the differentiation is in accordance with the above clinical and sign history modified by the site of the disease.

The differentiation of acute tubercular and non-tubercular diseases of the lungs is not nearly so easy and simple. Acute pulmonary tuberculosis occurs, in three forms, to-wit: First, an acute tubercularization with the morbid anatomy and therefore the physical signs of croupous or lobar pneumonia. Second, an acute tubercularization with the morbid anatomy and therefore the physical signs of broncho-pneumonia. Third, an acute tubercularization without the lobar or broncho-pneumonic lesions, and therefore without the physical signs of these lesions.

A typical case of croupous pneumonia with its classical symptom and sign phenomena is usually easily recognized. Indeed, the symp-

toms and signs, when all are present of this disease are a pathognomic group. It is in the atypical cases that difficulty occurs. Cases with gradual or prolonged onset, centrally located lesions, delayed development, or delayed resolution and therefore delayed signs, perhaps without pain, and it may be without rusty sputa, are examples of these atypical cases. On the other hand an acute tuberculous croupus pneumonia may have a classical pneumonic onset, symptoms and sign group.

The important points in the differentiation are:

1. Tubercular pneumonia is always from auto-infection; therefore a knowledge or discovery of an old tubercular lesion in the lungs, cervical or bronchial gland, or even elsewhere is an etiologic factor in the diagnosis. This is particularly true in rapid or advanced pulmonary tuberculosis.

2. As a rule the onset is not so sudden, the symptoms especially the prostration, pain and rusty sputa and rapid development not so pronounced as in croupous pneumonia.

3. The temperature curve usually shows a greater difference in the minimum and maximum, though usually of a continuous type.

4. As a rule both pulse and respiration are faster, often out of proportion to temperature and extent of the area of disease.

5. Crisis never, lysis rare, resolution does not occur, or is delayed or prolonged.

6. Almost invariably die.

In many cases the skill and judgment of the physician are severely tested, and sometimes it is impossible to clinically differentiate the diseases. And inasmuch as the pneumococcus may be found in tubercular cases, and the bacillus may be absent in tubercular cases, and may be present in pneumonia, even the bacteriologic differentiation does not always avail.

The differentiation of the broncho-pneumonic form is even more difficult. Simple and tubercular broncho-pneumonia have many morbid, clinical and sign phenomena common to both.

1. Both are secondary diseases as a rule.

2. Both are lobular in area involving the bronchioles, alveoli, adjacent connective tissue and blood vessels.

3. In both there is more or less occlusion of bronchioles and filling of alveoli with fluid, fibrinous and cellular products.

4. Therefore, the early physical signs are the same.
5. The onset and symptoms in the early stages are similar.
6. In their predisposing causes.

In the following features there is a difference:

1. Broncho-pneumonia is usually secondary to some disease which has a bronchial catarrh as a part of its morbid anatomy—measles, whooping cough, scarlet fever, diphtheria, typhoid fever, etc. The tubercular form occurs from auto-infection from a known or unknown old tubercular nidus, and as a sequel to simple broncho-pneumonia. Acute broncho-tubercular pneumonia from a hetero-infection is extremely rare.

2. The chief products of simple broncho-pneumonia are mucus, pus, fibrinous exudate and young cells from an active proliferation of the epithelial cells, in bronchioles and alveoli. The fibrinous and cellular elements undergo a fatty metamorphosis and absorption, leaving normal, or only slightly crippled bronchioles, alveoli, blood vessels and connective tissue.

The micro-organisms present are the piogenic and pneumococci.

In tubercular broncho-pneumonia the cellular elements are chiefly in the walls of the bronchioles, alveoli and blood vessels—in other words, characteristic tubercular tissue. There is, therefore, caseation with loss of structure, softening of the caseous mass, discharging of the liquified caseous masses and the formation of cavity. All the micro-organisms of simple broncho-pneumonia may be present, but in less numbers, and in addition the tubercle bacillus.

All acute broncho-pneumonias occurring during the attack of bronchial catarrh, whether this catarrh be an acute or chronic bronchitis, primary or secondary, with the physical signs of normal or occluded bronchioles, fluids in the smaller tubes and bronchioles, and of areas of lobular consolidation, and especially if the latter is due to atelectasis, the diagnosis of non-tubercular broncho-pneumonia may be safely made. If, however, the disease is subacute, more gradual in its onset and protracted in duration, the presence of tubercular disease is probable. When the signs show cavity formation, the diagnosis of tubercular disease is established. Cases that are acute in onset and severity, but protracted in duration, tubercular disease is suspected—either as an acute broncho-pneumonia, or as a tubercular infection of a simple

broncho-pneumonia. (In this latter case the infection may be hetero.) The presence of cavities confirms the diagnosis of tubercular disease, except when the cavities are the result of abscess or gangrene following aspiration or deglutition broncho-pneumonia. In these latter the history of the case affords a ready diagnosis. Prior to cavity formation the physical signs are almost identical, but as a rule differently located. In simple broncho-pneumonia the disease is usually basal; in the tubercular form usually apical. The former is always bilateral (except the aspirative form); the latter usually bilateral, but more distinct and pronounced on the side, indeed is often unilateral. Simple broncho-pneumonia is chiefly a disease of childhood and old age; the tubercular form of childhood and adult age—rare in old age.

As a rule the disease can be differentiated in the acute forms early in the history of the disease. In subacute and chronic cases a clinical diagnosis is always doubtful prior to cavity.

In acute miliary pulmonary tuberculosis without pneumonic lesions the physical signs are practically negative. It may be a part of a general acute tuberculosis; or it may be confined to the lungs. It is always due to an auto-infection through the blood vessels. There is the clinical picture of an acute febrile disease without significant local symptoms and signs. There is one symptom, however, always present and is very suggestive of this form of tuberculosis, to-wit: a rapid breathing, without the ordinary signs of imperfect oxygenation and without the signs of pulmonary or cardiac organic lesion. The symptom is simply a rapid breathing—40, 50 or 60, or even more, times per minute without organic lesion demonstrable by physical signs. There is no other condition with which I am familiar that presents that picture.

The morbid anatomy is a disseminated miliary tuberculosis throughout both lungs. The little tubercles can be felt upon the cut surfaces as little shot. The lungs are a little congested, but exudate, mucus, pus, etc., are not present. In the vast majority of cases this form is but a part of general acute tuberculosis, whose clinical history and course closely resembles typhoid fever, from which disease it is to be differentiated. It is always fatal whether local or part of a general infection.

Very little need be said about the blood vessels. Active hyperemia except as the first stage of pneumonic processes may be practically regarded as non-existent. Passive congestion, the result of cardiac and pulmonary organic lesions, can be differentiated by the presence of this adequate cause. Hypostatic congestion, or pneumonia, is easily demonstrated by physical signs and explained by the presence of the causes of this condition. Infarcts, sterile and septic, when large or near the surface of the lungs, present the signs of localized consolidation, and the presence of conditions which cause these infarcts usually makes the diagnosis easy. This is particularly true of septic infarcts, in which case, wherever the source of the infection, is simply a case of pyemia. The symptom and sign group of hypertrophic emphysema are pathognomonic. The atrophic is a part of a general senile atrophy or decay and is of no clinical importance. Edema presents quite a characteristic symptom and sign group.

PLEURA.

Acute, general, primary pleurisy with fibrinous or fibro-serous exudate, cannot be mistaken. It is non-tubercular and usually results from exposure to cold. Subacute chronic pleurisy with large sero-fibrinous effusion in the vast majority of cases is tubercular. Localized, secondary pleurisy may be either tubercular or non-tubercular and can only be differentiated by differentiating the primary disease causing it. Empyema may be either tubercular or non-tubercular, and can be differentiated by the history of the case and associated lesions. Following pneumonia and in cases of primary acute pleurisy in which the effusion is purulent at the beginning or becomes so, and in cases of septicemia from whatever cause, the disease is probably non-tubercular. In subacute and chronic cases it is probably tubercular.

Pneumo-thorax or pneumo-hydro-thorax may result from both tubercular and non-tubercular diseases and from traumatism.

It is impossible to discuss the details in the differential diagnosis of tubercular and non-tubercular diseases of the lungs and pleurae in a twenty minutes discussion. I have simply given outlines and general principles in the clinical diagnosis. Finally, while not a part of this discussion, the microscopic findings are always important and often-times absolutely essential to arrive at an accurate, or even approximately accurate, diagnosis.

Surgery of the Lungs. *

By E. P. Riggs, M.D.,

Birmingham, Ala.,

Discussing surgery of the lungs, I will mention first those diseases which only the bold and daring have attempted to remedy by surgical procedure. I allude to tuberculosis and bronchiectasis. The nature of the two diseases is such that rational surgery is in my opinion out of the question. They are almost invariably multiple and disseminated through both lungs. The results of operation so far as recovery from the operation itself is concerned is uniformly good; but in no instance has more than temporary improvement been claimed. Hence I will not go into the consideration of these diseases further than to mention them. Actinomycosis and acinococcus of the lungs and pleura where a diagnosis can be made are amenable to surgery here as in the other parts of the body, and the same general principles and technique are applicable here as elsewhere.

I regret that the gentleman preceding me did not go more fully into the differential diagnosis of putrid bronchitis, abscess, and gangrene. These diseases have both some objective and subjective symptoms in common. The character of the symptoms is much alike in all. The temperature curve is not characteristic of either. In all there is usually marked irregularity. Auscultation and percussion do not always give the desired information. And the history of abscess and gangrene may be identical. Nor does the character of the sputum indicate with any certainty the true nature of the condition. In all there may be a large quantity of grass green or brownish green expectoration with a cadaverous odor. In abscess and gangrene tabs of lung parenchyma elastic fibre and hematin crystals are usually present. The chronic course of putrid bronchitis, together with the distribution through both lungs, is sufficient to determine its existence. But I know of no sign nor subsymptoms that would define with precision the difference between gangrene and abscess except that of exploration.

*Stenographic report of an address before the Jefferson County Medical Society.

The surgical treatment of sero-thorax consists in aspirating, or what I think a better method, is syphon or hydraulic drainage. This is carried by the simple procedure of inserting a large trocar between the ribs and leaving the canula in order to pass the catheter through it into it, when the canula is withdrawn and the catheter allowed to remain in for twenty-four hours. Rubber tubing can be attached to the catheter with a glass tube and the distal end submerged in an antiseptic fluid placed in a receptacle by the side of the bed. There is no pain with local anesthesia and very little risk of infection under aseptic precautions. This method perhaps exercises a negative outside pressure and at the same time withdraws the fluid gradually, and in that way interferes scarcely at all with the pressure in the thoracic blood vessels, thereby minimizing the danger of collapse. It should be urged that the fluid should not be allowed to remain too long in the chest because the longer the lung is compressed the more difficult is its expansion.

Circumscribed empyema rarely requires more than the excision of a small portion of the rib. But this is conservatism in all cases. A simple thorocotomy is not surgical for the reason that the space between the ribs is not sufficient for drainage and closes up before the cavity has had time to heal. Removing a section of one rib is not much more severe than the puncture and is decidedly more effectual. In general empyema of short duration this resection of a rib also usually suffices to effect a cure. Irrigation is never called for; it never accomplishes any good and may do harm. After the cavity is opened the finger may be inserted and masses of fibrin removed, and at the same time adhesions, if there be any in reach, broken. A liberal outside dressing after this is all that is required. The point of drainage should be adopted to the point of gravity of the chest cavity, but should not be low enough to be interfered with by the diaphragm.

We come to the class of long standing. Where the pleura is much thickened, adhesions firm, and the lung collapsed with the abolition of pulmonary tonus the problem is a difficult one. So long as the surfaces of the pleura are separated even after the adhesions are broken up the cavity will continue to suppurate. Estlunder attempted to overcome this condition by removing sections of several ribs in order that the parietal pleura might be compressed against the pulmonary pleura. While this method succeeds in a good many cases there are some severe

ones where it fails. To reach these extreme cases Schede advises the removal of the fibrous tissue of the chest wall along with the ribs. He begins his incision at the fourth rib and extends downward along the posterior border of the pectoralis major muscle to the tenth rib in the posterior axillary line. The incision is then carried upward to the median line of the scapula. The skin with the underlying muscles are then dissected up, which gives a U shaped flap. The ribs are then divided subperiosteally in order to avoid hemorrhage. An ordinary pair of dressing forceps are now inserted through the old sinus and the intercostal tissue together with the masses of fibrous tissue are divided close to the margin of the lung. Hemorrhage is controlled by ligating the intercostal vessels as soon as they are cut. The flap of soft tissue is then made to fit accurately in the trough-like cavity in the chest. The wound should be left open behind for drainage. If the patient is very weak the operation can be done at one sitting.

Recovery is not rapid, but usually quite satisfactory. Not only have lives otherwise hopeless been saved, but the functions of the lung improved also to a marked degree. When the outside air pressure is removed as valueless the lung may resume its functions to a considerable extent.

The sudden entrance of air into the pleura is of little significance. The symptoms following withdrawal of fluid have been attributed to a number of causes. Whether it is mechanical, that is, the sudden relief of pressure on the heart, aorta, and pulmonary vessels, or whether it is the result of a disturbance of the pulmonary tonus through the vagus nerve is still a speculative question.

Most medical authorities hold that it is well to allow time for abscess of the lung to cure by expectoration. Doubtless many cases are relieved in this way. But where the diagnosis is positively established surgery is the rational way of handling these cases. It may be well if there are no threatening symptoms to wait a few days on medical treatment, but when septic symptoms are pronounced immediate surgical interference is imperative. Recovery under the expectant plan at best is exhaustive and prolonged. If the abscess is single and there is adhesion between the costal and visceral pleura the procedure is about the same as for encapsulated empyema, but where there are no adhesions the abscess is best reached after opening the chest wall by first aspirating all

the pus that can be drawn in that way, then after packing with gauze well around the point of puncture the wound can be enlarged and the cavity mopped out with sponges. The cavity is then loosely packed with gauze which is brought out through the external wound. In a short time adhesions will form between the pleural surfaces and the subsequent treatment will be simplified. The ideal method would be to stitch the costal and visceral pleura together before opening the abscess, but this is extremely difficult because of the movement of the lung and the space between the surfaces caused by the admission of air.

Gangrene of the lungs is of rare occurrence. It does not come very often under the notice of an observer. But it is agreed by both medical and surgical authorities that relief should be sought by surgery. The important point in managing these cases is to make a good window in the chest. The size of the wound adds but little to the risk and gives better knowledge of the extent and condition of the diseased area. Whether there are adhesions or not it is not advisable to remove by cutting any of the dead lung. An attempt to do so will almost surely encounter dangerous bleeding, and besides it only makes a fresh surface to be at once infected. By the time the area of putrefaction is determined nature has formed the line of demarcation and the wall of defense formed. So there is no absorption provided a proper drainage is established. The lung should be watched and when it becomes detached it can be picked out of the cavity.

It is worthy of emphasis that none of these cases, however extreme they may appear, should be abandoned. I have had recently under my care a patient where the slightest shock seemed sure to prove fatal. His life had hung by a thread for days, yet with general anæsthesia and the resection of ribs he survived the operation and eventually recovered.

Traumatisms of the chest are managed on general principles, except in gunshot wounds. These seem to do best on the let-alone plan. If there is much bleeding from the intercostal artery it should be ligated or controlled by pressure forceps. If the hemorrhage is from a deeper source it is beyond our reach.

Symposium on Goiter.*

Goiter: Pathology.

*By J. M. Lowrey, M.D.,
Birmingham, Ala.*

As I understood it, the subject for the evening was "Exophthalmic Goiter." I did not therefore look into the pathology of simple goiter. The latter, I believe, consists of a simple hypertrophy with increased secretion, and occurs most frequently in young adults and in pregnant women.

I think it a good idea to refresh our memories for a moment on the anatomy of the gland. The thyroid is one of the ductless glands situated in the neck and extending from the fourth or fifth tracheal ring to the thyroid cartilage. It weighs about one ounce to an ounce and a half, is relatively larger in the infant than in the adult, and in the female than in the male. The gland is shaped something like a horse-shoe, the poles pointing upward, and consists of two lateral lobes and the isthmus. It is convex anteriorly and concave posteriorly, embracing the trachea. The gland usually overlaps, sometimes covers, the common carotid artery, being grooved by this vessel in some instances. Attention should be called here to the proximity of the pneumogastric and the recurrent laryngeal nerves, as pressure upon them is occasionally the cause of important symptoms.

The lateral lobes are about one and a quarter inches broad at the base, and are one and a half to two inches long, reaching up to the thyroid cartilage.

The gland is surrounded by a transparent capsule of dense areola tissue, which sends some fibres to the trachea; others surround the esophagus; and still other fibres connect it to the cricoid and thyroid cartilages, causing it to rise and fall with the larynx in deglutition.

The isthmus usually lies opposite the second or third tracheal ring and is about a half inch in its vertical measurement.

The whole gland is remarkable for the number and size of its blood vessels and their free inosculation. The arteries are the superior thyroid

*Read before the Jefferson County Medical Society, March 11, 1907.
For Discussion see Society Reports in another part of this Journal.

(from the external carotid); the inferior thyroid (from the thyroid axis) and occasionally a middle thyroid (which, when present, may come off from either the innominate or the arch of the aorta) The superior thyroids enter the lobes on their anterior surfaces near their apices; the inferior thyroids enter the base of each lobe, and the middle thyroid, if present, ascends on the front of the trachea and enters the isthmus.

The veins are the superior and middle, which cross the carotid artery and empty into the internal jugular; and the inferior, two in number, which communicate freely across the front of the trachea, pass down and empty into the left bronchiocephalic vein.

The lymphatics (the real ducts of the gland) are both numerous and large, and pass into the gland with the trabeculae of connective tissue from the capsule, where they inclose the primary lobes or acini of the gland in more or less complete arches or rings. They empty into the right lymphatic duct on the right side and into the thoracic duct on the left.

The nerve supply is from the middle and inferior cervical ganglia of the sympathetic.

Accessory thyroids occur along the course of the carotid, and in the mediastinum as low down as the heart. The accessory thyroids have pretty much the same structure as the thyroid itself.

The four thyroids lie usually in pairs on either side of the trachea, near the thyroid, sometimes within the same capsule. These consist of solid columns of cells resembling more the structure of the suprarenal gland than that of the thyroid. Either the accessory or para thyroids, or both of them, may assume the functions of the thyroid.

Now as to the pathology. I was not able, with the literature at my command, to find much about it. Most of the authorities consulted contented themselves with the statement that the pathology had not, as yet, been satisfactorily worked up.

The usual classification is vascular and parenchymatous.

The vascular form is characterized by a marked increase in the size and number (?) of the blood vessels. These tumors are more or less rounded and smooth in contour, and occasionally reach a large size, covering the entire front of the neck. They are sometimes seen to pul-

sate actively. The gland cells do not necessarily participate in the disturbance, though there may be found the changes which mark the parenchymatous variety, viz: changes in the shape and size of the cells, increased colloid, etc.

In the parenchymatous goiter we may make, for convenience of study, a division into the following sub varieties, viz: odematous, fibrous, colloid and cystic.

In the edematous subvariety there is an irregular enlargement—scattered areas of hypertrophy—due to hyperplasia acini, but with no especial changes in tissue structure. The acini are sometimes larger and irregular in outline.

In the fibrous there is a great increase in the connective tissue forming the stroma of the gland. This necessarily results in a sacrifice of a number of the vesicles with a consequent decrease in the production of colloid, so that upon incision we find that the gland cuts with difficulty, and is dry and hard, in marked contrast to the normal juicy gland.

The outside capsule is also thickened in these cases.

In the colloid goiter there is a great increase in the cell area, both as to the number of layers and also by infolding of the layers, with the consequent distension of the vesicles by the increased secretion of the nuclealbuminous colloid. This distension may become so great as to cause pressure atrophy of the cell walls and this coalescence continue till large cystic areas are formed, with only a thin atrophic layer of the secreting cells lining the cavity. These also usually have more or less even, rounded outlines.

The cystic form, as just stated, may result from the colloid (colloid-cystic), but may result also from the breaking down of the adenomeatus. Occasionally it is the result of hemorrhage into some part of the gland, in which case the blood is usually absorbed, and its absorption followed by the effusion of a serous fluid into the cavity. Ecchinococcus is mentioned as a possibility.

Mayo* states that hyperthyroidism would be a better term for some of the forms of exophthalmic goiter, as the symptoms are due more to an increased secretion, debility and absorption of the colloid material than to any actual pathological change in the gland structure.

*J. A. M. A., Vol. XVIII, No. 4.

Humphrey noted fatty degeneration of parathyroids in exophthalmic goiter, but Mayo failed to confirm the finding. The latter mentions one rather peculiar circumstance: that in several well worked cases of exophthalmic goiter the thyroid itself would be wellnigh impalpable; but upon removal great enlargement would be found.

Of course malignancy may develop upon any of these conditions. Sarcomata may have a rounded, even contour much like the vascular type, but carcinomata are more apt to be irregular and nodular.

In degenerated goiters calcification is sometimes observed, and actual ossification has been found in few instances. Occasionally cystic areas are observed, which, instead of usual serous fluid, will be found to contain a brownish, grumous, semi-fluid substance, containing cholesterin.

Goiter : Etiology and Symptomatology.

By U. J. W. Peters, M.D.,

Birmingham, Ala.

Etiology.—Goiter may be sporadic or endemic. In goiterous districts epidemic outbreaks of the disease occasionally occur.

Sex.—Goiter occurs more frequently in women than in men, the proportion varying in different parts of the world. This has been explained by the fact that women are said to drink more water than men. Thus in India, where both men and women drink water freely, it is said that both sexes are affected in about the same proportion.

Heredity.—It is doubtful if this disease is ever truly hereditary, although it would appear that there is an hereditary tendency in certain families. It is very likely that the condition is due to the fact that the different members of the same family are subject to the same environments.

Age.—Exceptionally, goiter may be congenital. It rarely develops before puberty, although in a review of 70,000 school children in Berne, Switzerland, it was found that the disease reached its highest degree of frequency between the ages of 9 and 14 years. It will be noticed from this, that the disease is uncommon before the school age. Sometimes it develops in individuals past middle life.

Locality.—Sporadic goiter occurs in all countries, but the endemic form is found only in certain districts—usually the valleys of mountainous regions. In certain parts of Switzerland endemic goiter is quite prevalent. In Italy on the southern side of the Alps many cases are found. In England it occurs in the Pennine range. Endemic goiter is found quite frequently in certain parts of North America, parts of Ontario, and in Michigan, Montana and one or two other states. Munson has called attention to the prevalence of the disease among certain Western Indian tribes.

Water Supply.—The water supply in goiterous districts is now generally thought to contain the cause of endemic goiter. In Switzerland, Kopher found that in infected districts the water from certain fountains caused goiter in children who drank it, while families who lived near by, but obtained their drinking water from a different source, did not develop the disease. Again, localities where goitre is prevalent, changed the source of the water supply and in a few years there was a marked decrease in the frequency of the disease. The specific constituents of the water causing this disease, is not known. Many observers however, believe it is a bacterial agent. Since boiling the water renders it innocuous, it would seem that the latter view may be the correct one. From time to time various chemical constituents of the water have been believed to be the cause of this disease, but this theory have been proven. Various waters in different goiterous districts frequently show a very different chemical analysis. Thus at one time, it was thought that waters free from iodine were probably the cause of goiter, but it was soon found that in nearby districts, where goiter was prevalent, the drinking water of the inhabitants carried a large percentage of iodine.

SYMPTOMS.

Acute Goiter.—The thyroid gland may so increase in size in a few days as to produce symptoms. These may be impeded respiration, prolonged inspiration or paroxysmal dyspnoea. At times there is a peculiar raw cough and a distinct modification of the voice, due to the pressure of the enlarged gland. The swelling of the gland may gradually disappear in a short time, or it may grow very slowly, finally reaching an enormous size. It may cause the individual very little annoyance, except by its size, position or weight. The symptoms produced depend largely upon the exact anatomical position of the enlargement.

ETIOLOGY.

Age.—Exceptionally, goiter may be congenital. It rarely develops served in children as early as the second year, and it has occurred as late in life as the seventieth year. Women are affected by this disease earlier in life than men.

Sex.—Women are very much oftener sufferers from this disease than men. In 400 cases tabulated by Murray, 357 of these cases were in women and only 43 in men.

Heredity.—In some families there appears a distinct tendency to the disease. Oestereich reports a family in which an hysterical mother and 8 out of 10 children had exophthalmic goiter, and one of these children had four grand-daughters who developed the disease. Other similar examples of the heredity of Basedow's disease have been observed by Murray and others.

Locality.—Exophthalmic goiter is uninfluenced by locality. It is found quite as often where endemic goiter is rare as in regions where the latter is prevalent. Exophthalmic symptoms sometimes supervene after the long existence of ordinary goiter. This does not occur with sufficient frequency to prove that common goiter is likely to be followed by Graves' disease.

Personal History.—Certain diseases, as rheumatism and quinzy, some times precede or accompany goiter. Basedow's disease often develops rapidly after a fright or prolonged anxiety, excitement or grief. Pregnancy may be a contributory cause. Sexual excitement is thought to to be a contributing factor in a few cases.

EXCITING CAUSES.

There is still a wide divergence of opinion as to the exact nature of exophthalmic goiter. The neurologists are of the opinion that it is neurosis. Buschan defends this theory, believing that it is a general neurosis in which the psychic and vaso-motor functions are markedly affected. Mendel contends that a lesion in the corpora restiformis is the cause of Basedow's disease. Sir Victor Hawesley in 1885 put forward the theory of hyper-thyroidization. Modius holds that it is caused by either a hyper-thyroidization or disthiroidization. Kocher believes the excellent statistical results of the operation of thyroid-ectomy are proof of the correctness of this theory. Whether the functional dis-

order consists in a perverted activity of the gland in a sense of a dysthrosis or in a simple exaggeration of the normal function (hyperthyroidization) is still open to discussion. Gordan and others are of the opinion that the immediate cause of Graves' disease lies in the sympathetic nerves and their ganglia. Recently it has been suggested that the disease depends upon some lesion which destroys the parathyroids, producing in this way parathyroid insufficiency.

SYMPTOMS.

The onset may be either gradual or very sudden. The most constant symptoms are enlargement of the thyroid and the phenomena referable to the heart and circulatory system.

Enlargement of the thyroid gland is present in nearly all cases at one time or another. In 283 cases tabulated by Murray, all except 29 cases showed more or less enlargement of the gland. The enlargement may be the first symptom to develop, or it may appear some time after other symptoms have become apparent. The increase in the size is usually gradual although exceptionally it takes place in a short time. The size attained by the gland is commonly not so great as in ordinary goiter, indeed, it is often only slightly enlarged. While as a rule enlargement is symmetrical, occasionally one lobe—the right most frequently—is larger than its fellow. The consistency is variable. A pulsation is sometimes present, and a thrill can often be detected on palpation. A blowing murmur may be detected at times in some cases.

Heart. The most constant and most noticeable symptom in exophthalmic goiter is the violence and frequency of the heart's action. Charcot declared that this symptom was invariably present. The appearance of the acceleration may be rapid or it may be gradual and intermittent. The patient is usually conscious of the palpitation. The pulse rate varies; it may be 90 or 100 and in well marked cases it not infrequently reaches 120 to 150 and exceptionally it may go as high as 200 beats per minute. The heart is very irritable, the slightest exertion or excitement will send the pulse up 10 to 20 beats per minute. The pulse, as a rule, is small, soft and regular. Blood pressure is sometimes increased and sometimes diminished. Inspection of the chest reveals the force and area of the cardiac impulse. The impulse is short, sharp and sudden. Late in the disease the area of dullness is sometimes increased to the

left. Opinions vary as to frequency of murmurs. Russell Reynolds found murmurs in two-thirds of his cases, while Mannheim detected murmurs in only 5 out of 40 cases. A systolic murmur can sometimes be heard over the apex and base of the heart. Gowers believes it is produced at the orifices of the large vessels. In some cases it is haemic in origin, while in others it is due to disease of the mytral or bicuspid valve. . The arteries pulsate forcibly.

Exophthalmus is usually present, but is not an invariable symptom. It is not commonly the first symptom to develop. Mannheim found it in 74 to 85 per cent. of cases. As a rule it appears gradually, but rarely the onset is sudden. The exophthalmus is usually bilateral. It may be unilateral. The eyes may be affected irregularly, and when this is the case, the right eye is most commonly the one affected. The degree of enlargement is variable in different cases, and may even vary from time to time in the same case. Von Graefe's symptom (a defective descent of the upper lid when the eye balls are directed downward) occurs in from 10 to 20 per cent. of cases. It must be remembered that this sign is sometimes seen in other conditions. Stellwag's sign (the widening of the palpebral aperture) was found to be present in 4 cases out of 41 examined by Mannheim. It varies in degree.

Mobius first called attention to the lack of normal convergence of the eyes in a certain proportion of these cases, suffering from Basedow's disease. Kocher has recently found another eye symptom, which he considers of considerable value. There is a sudden retraction of the upper lid when the patient is made to look steadily at you, or to look upwards suddenly. Various forms of paralyses of the external muscles of the eyes may accompany exophthalmic goiter.

NERVOUS SYSTEM.

There are certain nervous phenomena which frequently occur in Graves' disease. Perhaps the majority of cases—some observers say in all—there is present at some time during the course of the disease a tremor. It may be unilateral or bilateral; it may be present in only one limb or it may be more pronounced in one limb than in others. A tremor is constant while it lasts and the rythm is rapid and regular. Only exceptionally does the tremor interfere with the movement of the

hands or legs. Other symptoms of the nervous system are mainly psychical. The patient is nervous, irritable and excitable. They are likely to be despondent and easily provoked to tears. Some are quarrelsome. There is a failure of the memory. Sleep is disturbed by fantastic dreams.

CUTANEOUS SYSTEM.

There is a tendency of the pigment of the skin to take on a dark coloration in those regions where pigmentation is naturally rather abundant. The color varies from a liver color to a dark brown. Jaundice has been observed in a number of cases of exophthalmic goiter. The activity of the sweat glands is often increased.

Edema not infrequently occurs as a direct result of the disease. It appears irregularly in various parts of the body.

There is almost always more or less loss of the hair and the scalp axilla pubeas. The nails become thin and brittle.

DIGESTIVE SYSTEM.

There is loss of appetite in some cases, while in others it is variable. Vomiting may occur and is often accompanied by hematemesis. Diarrhea occurred in 46 out of 150 cases observed by Mannheim.

RESPIRATORY SYSTEM.

Respiration is usually increased. Dyspnoea and cynosis of the face has been observed. Paroxysms of coughing, of nervous origin occur in some cases.

URINARY SYSTEM.

Polyuria is not uncommon. Albiminuria probably of functional origin has been described by several observers. Glycosuria is mentioned by many writers.

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Goiter : The Medical Treatment.

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Birmingham, Ala.

The thyroid gland when functioning improperly, or when not functioning at all, gives rise to symptoms which in their importance almost assume the dignity of separate and distinct diseases, viz: Goiter, Myxoedema, Cretinism and Exophthalmic Goitre.

Simple goitre suggests treatment on the same principles as do other ductless glands when in an abnormal condition. Medicaments are directed at the gland per se in an effort to retard growth, thereby obviating secondary and more serious symptoms.

The remedies handed down to us for local application are iodine and Red Oxide of mercury ointment persistently and continuously applied.

This in an acute case together with iodine internally I believe would be effectual, but after thyroid tissue is changed into colloid, beneficial effect from these remedies is doubtful.

Massage, galvanic electricity together with systemic alteratives might avail something, though the simple life, embracing all the hygienic precautions necessary for general health, would likely accomplish as much. Of course pressure symptoms, or malignancy call for the knife.

Thyroid extract is claimed by some to have reduced the gland, though the rationale has not been satisfactorily explained, nor the results substantiated.

Inasmuch as the aetiology of sporadic cases is so obscure it is small wonder that there is indefiniteness as to special remedies. As to endemic cases, change of climate, usually to the seashore, together with change of water supply are the simple and effectual remedies.

Myxoedema, or more properly speaking *Interstitial Thyroiditis* or *cirrhosis of the thyroid*, is a symptom of destruction of the thyroid gland-tissue, just as ascites may be a symptom of cirrhosis of the liver.

We are told that general metabolism of the body is influenced by a secretion, which is formed by the epithelial cells of the alveoli of the gland. Any irregularity in this secretion will beget symptoms and bring about conditions as destructive as those of changes of nutrition from disorder of any of the other glands.

Experimental pathology of recent years has turned on the light and has made practical therapeutics possible in this disease. Until about 1890 Myxoedema was considered an incurable disease, and the most done was to relieve distressing symptoms as they came about. Tonics to build up, Jaborandi to moisten the skin, whiskey to warm up the depressed patient was the limit. Now it is considered as curable as syphilis.

The only remedy worth mentioning, and the only one of definite virtue in the treatment of Myxoedema, is thyroid extract. The idea of using this was suggested by the successful transplanation of a gland, or part of a thyroid gland into the subperitoneal tissuse, or into a fold of mesentery, or under the skin.

About 1890 Murray, of Scotland, after observing that the absorption of juices from a grafted thyroid gland showed improvement, decided that a hypodermic injection of an emulsion, or extract of the thyroid of a sheep would be rational. Glycerine extract of the thyroid gland of a sheep diluted by a weak solution of carbolic acid was used. It was advised that it be used by mouth in order to avoid risk of infection by needle and careless handling. This form is better to use, except when the patient is traveling, or far away from a drug store. 5-grain doses of the powder or tablet may be given t. i. d. The pulse is an important guide to regulation of the dose. Increase of the pulse ten to twenty beats per minute indicates that the dose is quite large enough. Other indications for lessening the dose are temperature and alimentary canal disturbances.

Myxoedema patients are all more or less victims of degenerative changes, thereby creating the importance of hygienic precaution and heart supporting remedies, and even after the symptoms are overcome, the gland remaining functionless, the extract should be continued. There is convincing proof that though the Interstitial Thyroiditis remain, the Myxoedema can be cured.

Cretinism is even more amenable to treatment than Myxoedema. The same principle of treatment applies here, for we have the same conditions in a different setting. The earlier vigorous treatment is begun the better will be the results.

Exophthalmic Goitre treatment it seems has varied according to the current views of the time as to its nature. The generally accepted

theory at the present day, and the one upheld by Moebias and others, is that the symptoms of the disease are caused by excessive secretion of the thyroid gland, therefore, treatment must be directed towards improving the thyroid gland. We must, if possible, reduce the size of the gland, diminish its functional *activity* and counteract the toxic effect of the excessive or abnormal secretion upon the nerve centres. Ichthyol and red iodid of Hy ointment are indicated as local applications, but those who have used them report no good results.

As to reducing the secretion of the gland, I have seen appreciable results, in fact, I have seen all symptoms influenced by a continuous use of Belladonna, given in 10-drop doses t. i. d. Large doses (10 gr.) of bromide of potash to allay the tremor and nervousness.

Serum. Serum therapy is based on the theory that Exophthalmic goitre is a toxemia, and that the toxin in question is the thyro-globulin.

Accepting the theory of hyperthyroidization as the cause of exophthalmic goitre, the rational method of treatment would seem to be that of serum therapy, by which we could introduce a substance to neutralize the harmful products of excessive thyroid secretion, or by which we could make use of a cytotoxic serum which has a selective, destructive action on the secreting cells of the thyroid gland alone.

Following along these lines, Ballet and Emriquez, in 1895, at the Congress of Alienists and Neurologists at Bordeaux, published their results of the use of serum of thyroidectomized dogs, which was given in doses of 5 to 15 c. c. with beneficial results.

In 1899 Burghart published the results of his work with Blumenthal, in which they treated a case with the modified blood of a myxoedematous patient, with temporary improvement. In the same paper they described the use of liquid serum of thyroidectomized dogs in one case, and the dried serum in two cases, all three cases showing improvement.

In 1901 Moebius described the use of serum of thyroidectomized sheep in the treatment in three cases with beneficial results. To this serum he gave the name of antithyroidin.

In 1902 Schultes reported a cure in a case treated by the same method.

In 1903 Moebus reported two more cases treated by his antithyroidin with improvement and stated his preference for this method over the use of "Rodagen," which he had also used. At this time he also made known the use of the dried blood of thyroidectomized sheep.

In 1904 Murray gave his results from the use of this method. He fed to rabbits increasing doses of a thyroid preparation for a month and used the serum from these animals in the treatment of two cases of exophthalmic goitre. The results, however, were disappointing, although some improvement was manifest.

In 1903 Adam reported a case successfully treated with anti-thyroidin in which the symptoms returned when the treatment was stopped, but again disappeared on the readministration of the serum.

In 1905 Kuh described the case of eleven patients treated with the serum of thyroidectomized sheep, all of whom were improved in varying degrees; and later Mix reported excellent results in two cases. Later, in 1905, Hallion made known his preference for the use of the whole blood, preserved in glycerin and given in doses of one to two teaspoonfuls daily. He believed that the active principle lies more in the corpuscles than in the serum and stated that Enriquez had adopted this method, giving increasing doses so that three tablespoonfuls were eventually given in a day. Durig and Lomer have also recently each reported a case and Alexander reported three cases treated by the serum of thyroidectomized sheep, all of which were benefitted, but none cured.

The method of preparing and standardization of the serum as explained by Rogers and Beebe is quite interesting. The time will not permit of here going into the details. Suffice it to say that two (2) varieties are usually made and employed—that made from the normal gland and that from the pathologic.

Looking over all the cases that have been reported in which the serum treatment has been employed, one cannot help feeling that we have in it an agent which does influence the disease favorably, and may, with further modification, prove of more uniform value. It may be along this line or by the use of the cytotoxic serum, which has been evolved by several investigators and so successfully used by Beebe and Rogers, as was recently reported in their admirable paper, that we are to find a specific means of relieving the distressing symptoms of a most troublesome disease.

These men say that all forms of exophthalmic goiter respond better to the pathological serum and vice versa.

Rogers reports ninety cases during last year upon which he used the

serum. 23 were cured; 52 improved; 11 failed to improve, and four died.

Dr. Gilman Thompson, of New York, recites eighty cases. He recommends no special medicines, but extols very highly serum therapy. He gives the opinion, which has also been advanced by Rogers, that the serum is applicable to all forms of exophthalmic goitre, but the acute toxic type is most amenable to it. They do the best with the least serum. The cases of great chronicity with thyroids large and hard, dilated veins with associated organic change of the nervous system are impressionless.

It stands to reason that unless toxæmia in any goitre case is put in abeyance before organic nerve lesions have been produced any kind of treatment, except palliative of secondary symptoms, is futile.

The method of injecting serum should be clothed with caution on account of the reaction which sometimes brings about serious symptoms. Rogers has noted some very alarming reactionary symptoms, and says fatal results are only too easy to get by pushing the serum too vigorously in early treatment.

1 c. c. of the serum at a dose every 24 hours, increased 1-2 c. c. every 24 hours until some noticeable improvement.

If it does its work through its inhibitive power of the serum on the thyroid epithelium, results could not be anything else than slow. A favorable outcome cannot be hastened by increasing the quantity or frequency of the dose, except in the acute toxic cases.

Evidently there is nothing spectacular in the recovery of these cases. Convalescence, like typhoid or any other exhausting disease, is exceedingly slow, and often interrupted by exacerbation of the process.

Whatever drug we may use, or whether we may or may not have a specific general hygienic measures are very essential in these cases.

Tyson reports some recoveries and many improved by the opposite of such conditions, as worry, fatigue, excitement, depressing emotions, sexual and alcoholic indulgences, etc. He says defer drugs until rest has been tried.

Goiter: Surgical Treatment.

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Surgery of the neck has not been as popular as that of the abdomen, but it no longer has the element of novelty. The heavy surgery of the neck when compared to much of the surgery of the abdomen, however, is so stupendously severe for both patient and operator, that I am convinced that Dr. Chas. Mayo was correct when he said "A large part of abdominal work is a recreation as compared with the bulk of what might be called the heavy surgery of the neck."

Coming at once to the treatment of Goiter, which has until the past few years been seemingly in an unsettled state, is now determined definitely by surgical procedure. It is as truly a surgical disease as gall-stones, appendicitis, and chronic gastric ulcer, and the same fight that was made to popularize the surgery of chronic gastric ulcer, appendix, and gall ducts is being waged to popularize the surgical treatment of diseases of the thyroid gland.

In reviewing the surgical literature of this country it would appear that goiter, like appendicitis, gall-stones, and gastric ulcer, is greatly on the increase. This is due to the fact that the surgical treatment of goiter is growing in popularity. In fact the low mortality attending the surgery of the thyroid gland will compare favorably with that of other major operations—especially of that of the appendix, gall-stones, and stomach. And the fact that surgery of the thyroid is becoming more universally popular accounts for the apparent increase in goiter cases rather than an actual increase.

Dr. Chas. Mayo, to whom we owe as much as to Kocher, and particularly so for the popularity of surgery of the thyroid in this country, has during the past seventeen years operated on 300 thyroids with eleven deaths. Of these 110 were for exophthalmic goiter, with 9 deaths in all, and but two in the last sixty-four cases. Two deaths in the early work were from accepting almost moribund cases as surgical risks. Among the remaining operations, representing cysts, colloids, adenomata and parenchymatous, including 9 malignant tumors, there were but two deaths; 1 on the eighth day from pneumonia, the other from tracheal

collapse following removal of carcinoma. One case was a large lingual thyroid, three were tumors of the pyramidal lobes, 2 only were accessory thyroids in the superior line of inversion, 2 were incisions and drainage for acute inflammatory conditions, 2 were for sarcoma.

Of those who survive the operation in exophthalmic cases 50 per cent make an early recovery, 25 per cent improve of the main symptoms during several months, and 25 per cent., while greatly improved, have occasional temporary relapses of the tachycardia and tremor. The exophthalmos is often one of the last symptoms to disappear."

Among ordinary goiters (Mayo), in 70 operative cases before 1850, Kocher placed the mortality at 40 per cent. In 400 operations between 1850 and 1883, it fell to 15 per cent., and since 1883 has dropped to less than 3 per cent., Kocher's own being 0.4 per cent in simple cases. In Riverdin's report of death of 93 cases, respiratory conditions, suffocation and pneumonia caused 43 deaths, hemorrhage 19, infection 12, shock and nerve injury 9, cardiac failure 6, while only 4 were from tetany and myxedema.

Kocher reports 70 per cent. of cachexias in 34 cases of total excision. Garre reports 50 per cent. in 67 cases. Billroth had 52 cases develop tetany, with 9 death, and 11 developed cachexia. The London myxedema committee only found 24 per cent in 224 cases of total excision. Considering the remarkable conditions which occur from a loss of the secretion of the thyroid, we are not surprised at the serious derangements from an oversecretion or an abnormal secretion.—(Mayo).

I have operated on 24 cases of goiter and two accessory thyroids with no death. Five cases were exophthalmic. Operation for exophthalmic goiter only the right side was removed.

If I have had no deaths it is not to be attributed to my surgical skill so much as to the fact that I have failed to operate on many advanced cases of exophthalmic goiter that I would now operate on, which probably would given me a large death rate. Within the past year I have turned down three advanced exophthalmic cases, which I now believe should have been operated on. One of these, our President will remember having seen with me, should have been given the benefit of an operation. This case, as well as the other two, are now dead. And this experience I have had with several more advanced cases and one cancer, which, if I had operated on, would have certainly given me a mortality.

Surgery of the thyroid is about as satisfactory as the average capital operation. Most cases are out of bed in a few days.

In exophthalmic goiter the condition of the gland is usually a subordinate matter. These cases are etiologically in a different class from those which produce no nerve symptoms, and are especially different from all other conditions of the gland in as much as exophthalmic goiter is clearly a surgical disease and better results are obtained through surgical treatment—the size of the gland cuts no figure in the decision in favor of surgical treatment. I have operated when the gland appeared to be very slightly enlarged.

Dr. Mayo has operated on cases of exophthalmic goiter, which were hardly palpable, but always found the gland of surprisingly increased size over the normal when exposed. And says, after all it is a question of increased absorption and delivery by the lymphatics, and not necessarily the retention and development of a tumor.

Dr. Mayo classifies exophthalmic type as 1, vascular; 2, hypertrophic; 3, hyperthyroidism developing on previously existing goiter.

"A fibroid condition of the gland may follow recovery from exophthalmic goiter, and the consequent loss of function later may cause myxedema. Ord and Mackenzie tabulated 56 medical cases of exophthalmic goiter which had lasted five years or been fatal. There were ten recoveries, 11 made in complete recovery, in 13 there was considerable improvement, 4 were unchanged, and 14 (25 per cent.) were fatal. Others make more favorable reports."

The application of a strictly statistical method to this subject is capable of producing almost any result to which one's general judgment might tend, and very certain to result in practical support of any method of treatment of goiter. I am rarely influenced by the usual percentages deduced from the tabulation of statistics of the majority of hospitals, but in the discussion of this subject I have referred to reports of cases that are trustworthy.

In selecting cases for surgical treatment we must distinguish between the cases that have not been permanently benefitted by medical treatment, that class which may be amenable to treatment and that hopelessly ill class of cases amenable to no treatment.

In the grave neglected cases with beginning virulent toxemia; with beginning changes in the lungs, whether edematous or narcotic, no treatment will cure—or rarely improve—will only bring surgery into disrepute. But in that small per cent of cases; temporarily amenable to medication and electricity—X-ray surgery offers hope of relief.

Dr. Koker says 90 per cent of all cases are amenable to medication, and it is the remaining ten per cent of cases which will not recover under any form of medical treatment in which surgery is indicated—and to which surgery should be limited.

According to Bergeat and Mayo the necessity of a second operation on goiter is rare—being required in only about two per cent. Wolff, Mayo, Rivendin, Kocher, Poncet, and Woeffler all state that when one-half of the gland has been excised for hypertrophic goiter the remaining half always diminishes, and this I have observed in my limited experience.

The semi-surgical treatment of goiter, by injection, puncture and drainage methods are nearly as dangerous as radical operative measures.

I have had no experience with the removal of the cervical sympathetic ganglia, as advocated by Abadie and Edwards and popularized by Jonesco and Jaboulay. Dr. Mayo does not believe it as effective as the operation on the diseased gland and says Rehns' report makes it less than half as favorable.

I have had no experience with serum from the thyroidectomized animals, but would suggest it as valuable aid in preparing advanced cases for operation. I usually use belladonna and this X-ray for this purpose as "they seem (Mayo) to exert a favorable effect on the over-activity of the gland in exophthalmic goiter, and in some cases seemingly develops something of a capsule and partially changes the character of the tumor. While its effect may not be permanent it is a valuable adjunct in preparing advanced cases for surgical procedure."

I prefer ether anaesthesia though in my early cases I used chloroform. Local anaesthesia may be necessary in some cases. It is applicable in a large per cent of cases.

I have recently adopted the technique formulated by Dr. Mayo, which is as follows: "Ether anaesthesia is preceded twenty minutes by hypodermic of 1-6 gr. of morphine and 1-120 gr. of atropine. The

table is placed in an elevated slanting position with the head up (reverse Trendelenburg). The tumor is rendered prominent by a roll beneath the neck if it does not interfere with respiration.

"The collar or transverse incision is preferred. In tumors of medium size this crosses the center of the tumor, in large tumors it crosses the upper third and the lower flap is split vertically to the sternum if necessary.

"The incision is through skin and platysma muscle, the flap being raised to expose freely the muscles covering the gland, namely, the sternohyoid and thyroid, the inner portions of the sternomastoid and omohyoid. In growths of medium size muscle separation will permit of the delivery of the tumor. The muscle section of the sternohyoid and thyroid group, if made, should be near their upper attachment so as not to interfere with their nerve supply and also to break the line of scar formation from that part of the skin. After the removal of the gland, the several muscles are carefully united by suture. The upper section also permits of early ligation of the superior thyroid artery which is the key to the situation.

"The more firm and rounded tumors, with a strong capsule, can be readily enucleated after incising the capsule and penetrating the gland tissue to the cyst. We usually loosen the gland from the outside of the capsule first. On viewing the tumor, the true capsule has the luster and appearance of peritoneum. If one is not sure, incise between the vessels. Should hemorrhage be severe, lifting up the tumor by its capsule will reduce the bleeding until sutures can be placed for its control. In parenchymatous and colloid tumors make extirpation of one lobe and the isthmus. After exposing it the upper pole is elevated and the superior thyroid artery is cut between the ligatures. The lateral veins are clamped and cut, the lower pole is elevated into the wound, incision is made along the outer posterior border, and the capsule is brushed off with gauze to the median line. As a rule, the inferior thyroid is now ligated close to the tumor as the capsule is brushed back. This leaves the nerve behind and usually out of sight. The isthmus is clamped and closed by suture. If the enucleation method for adenoma and cysts leaves a badly torn lobe it can be removed. Sometimes extirpation of

one lobe is made and enucleation of cystic masses is done on the opposite side, after the method of Porta, Billroth and Socin. The resection method of Mikulicz was only employed in one case, but with good result. Avoid rough handling of the portion of gland to be left.

"Should there be a large area of cut gland exposed it is burned over with carbolic acid, followed by alcohol, or often Harrington's No. 9 solution is applied over the cut tissues to close the lymph absorbents and favor drainage. If there has been but little traumatism we do not drain. Large incisions and large cavities are drained temporarily. All exophthalmic cases are drained as freely as the most septic wound.

"These cases absorb some wound secretion containing colloid, causing rise in temperature and increase of pulse the next day. To delay absorption, especially in exophthalmic goiter, patients are given large quantities of salines by the bowel directly after the operation and for the first two to four days. If not retained by the bowel, they are given subcutaneous administration.

"The wound is closed by subcuticular suture, great pains being taken to unite the platysma to prevent spreading of the scar.

In most cases the drainage wick is inserted through a stab wound at the sterno-clavicular notch.

Induration of the Head and Tail of the Pancreas.

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In this preliminary note I wish to call attention to two points relative to the pancreas, viz.: 1, the induration of the caput pancreaticus occurring in the course of the intra-pancreatic segment of the common bile duct, for the distance of about an inch; 2, the induration occurring in the cauda pancreaticus.

INDURATION OF THE CAPUT PANCREATICUS.

THE INTRA-PANCREATIC SEGMENT OF THE BILE DUCT.

A significant landmark in the choledochus communis is that which passes through the pancreaticus, the pancreatic head. From my examinations in autopsies I should judge that the bile duct coursed obliquely through the head of the pancreas in 90 per cent of subjects. The Choledochus is imbedded in the pancreatic substance for perhaps an inch in length and so firmly surrounded by pancreatic substance that it may

be difficult to liberate the duct by blunt dissection and pancreatic incisions are accompanied by alarming haemorrhage. I shall term this the *intrapancreatic segment* of the common bile duct. It is not only a significant anatomic landmark but also an important pathologic landmark of the common bile duct. The pathologic signification of the passage of the choledochus through the pancreatic head is that the pancreas may and actually does become infected by the duct. It is common in autopsies with hepatic duct infection to be able to palpate an induration of the segment of the



FIGURE 1.

pancreas through which the common bile duct courses. The choledochus communis becomes attacked by catarrh, infection, which gradually penetrates its wall, passes into the glanular ductus bilis (Glands of Theile, Prof. of Anatomy in Jena, Germany, 1807-1879) and eventually infects the connective tissue and parenchyma of the pancreas—ending in pancreatic infection, induration, hypertrophy, or atrophy which may compromise not only the lumen of the cho-

ledochus communis but also compromise the lumen and parietes of the ductus pancreaticus. Compromising of the hepatic or pancreatic ducts signifies retention and absorption of bile and succus pancreaticus.

Thus, anatomic arrangement of the intrapancreatic segment of the bile duct explains the clinical relation of the hepatic ducts to the pancreas. The intrapancreatic segment of the ductus choledochus communis may infect the caput pancreaticus. This is the key which un-

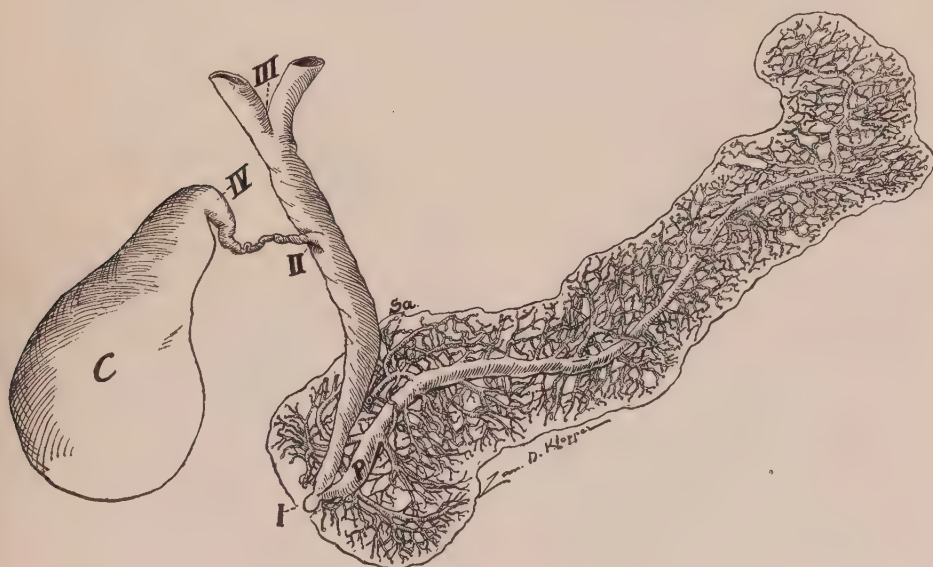


FIGURE 2.

locks the information that the head of the pancreas is so frequently diseased.

INDURATION OF THE CAUDA PANCREATICA.

For years I have observed the peculiar induration found in the tail of the pancreas, it is not found in every subject. I am convinced that the tail of the pancreas becomes infected chiefly through the colon especially adjacent to the flexura coli lienalis. It may, however, become infected from the stomach or pelvis of the ureter. The infection of the cauda pancreatica so far as I am aware leads neither to neoplasm or malignancy as it is liable in the caput pancreaticus.

However, the pancreas appears to be the most powerfully resistant

and healthy organ in the abdomen. In hundreds of autopsies it has appeared to me to present less pathologic conditions than any other abdominal viscus. Hence the ductus pancreaticus will retain similarly healthy conditions. The common remark of the pathologist subsequent to a longitudinal incision through the pancreas is—*negative*. The

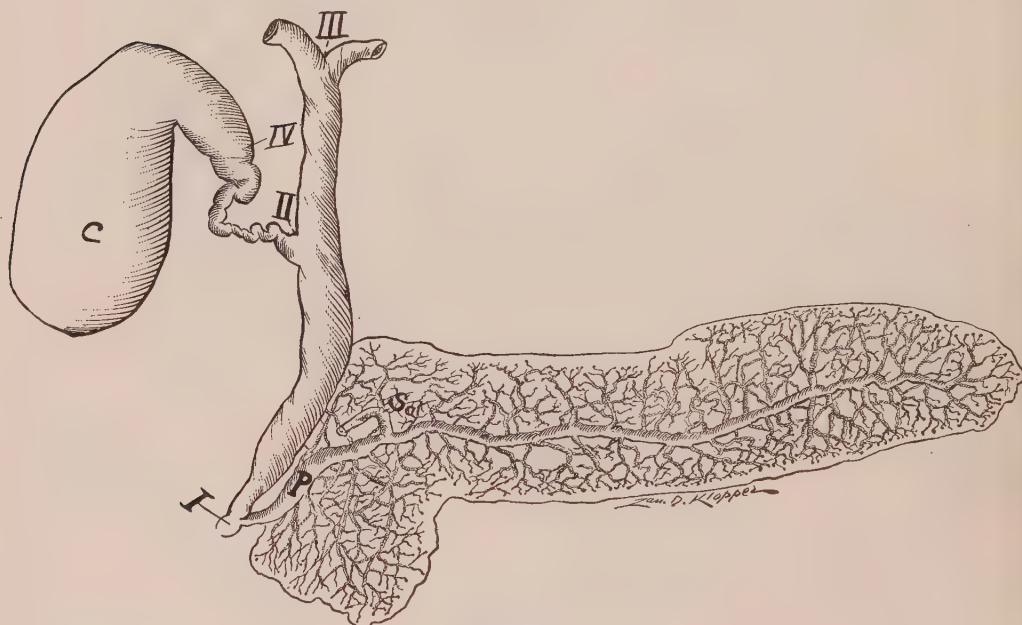


FIGURE 3.

chief induration of the pancreas occurs in the conda (from colonic infection) and second in the caput (from bile duct infection).

Ductus Pancreaticus with Part of Ductus Bilis.

Fig. 1 illustrates a drawing of an X-ray of what I term the *intra pancreatic segment* of the common bile duct.

The Roman letters I, II, III and IV are common to all the figures.

I to II—Ductus Choledochus Communis.

II to III—Ductus Cysticus.

II to IV—Ductus Hepaticus.

C—Cholecyst. P—Ductus Pancreaticus.

Intra Pancreat Segment.

Fig. 2. X-ray of Ductus Pancreaticus and Part of Ductus Bilis.

Fig. 3. A variety of Pancreatic Segment of the common bile duct.

Ductus Bilis et Ductus Pancreaticus.

Fig. 4. X-ray. In this subject the intra pancreatic segment was of short length. Sa ductus Santorini.

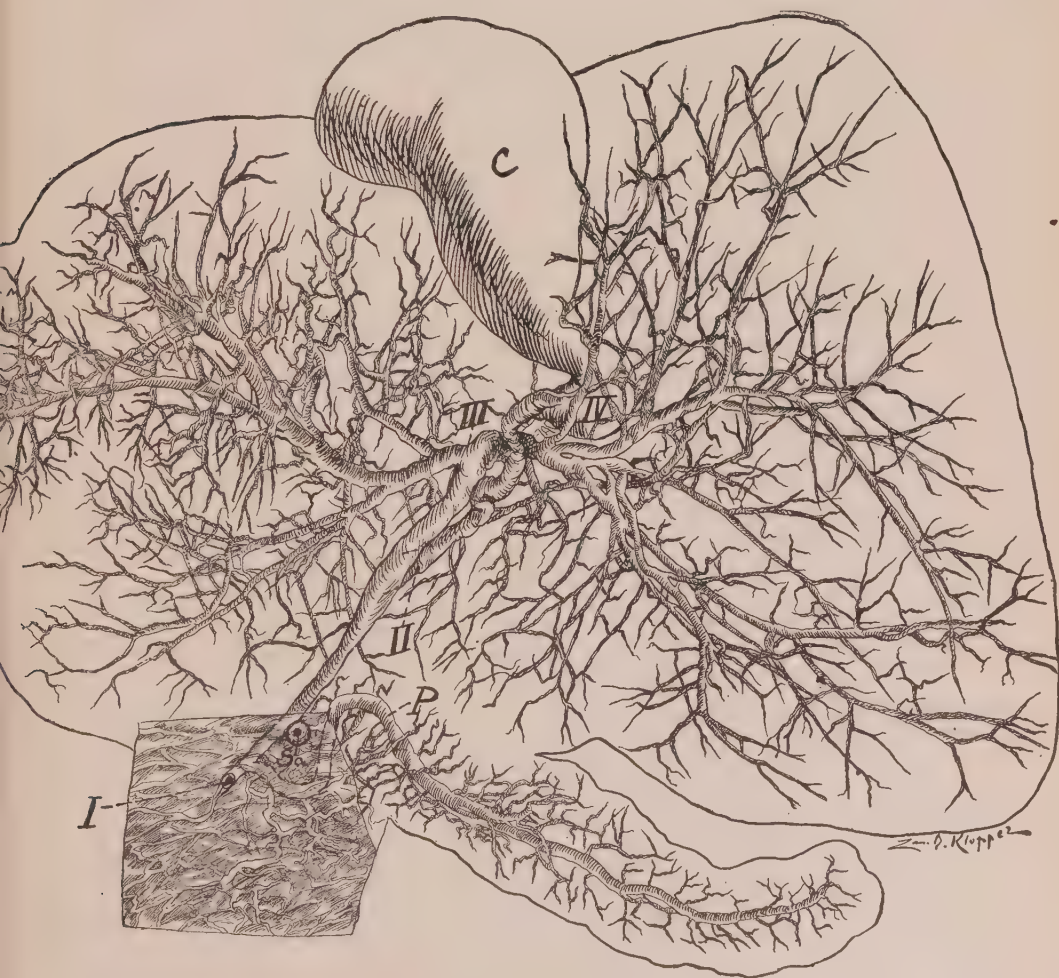


FIGURE 4.

Senate Bill No. 354, to Regulate the Practice of Medicine in the State of Alabama.

Section 1. *Be it enacted by the Legislature of Alabama, That the* board of censors of the Medical Association of the State of Alabama, organized in pursuance of the constitution thereof, adopted at Tuscaloosa, in March, 1873, is hereby constituted a State board of medical examiners, and is charged with the duties hereinafter prescribed.

Sec. 2. That an applicant for a certificate of qualification to treat diseases of human beings by any system of treatment whatsoever shall, according to rules prescribed and standards established by the Medical Association of the State of Alabama, be examined, in writing, by the State board of medical examiners in the following named branches of medical learning, to-wit: Chemistry, anatomy, physiology, the etiology, pathology, symptomatology, and diagnosis of diseases; obstetrics and obstetrical operations; gynecology; major and minor surgery; physical diagnosis; diseases of the eye, ear, nose, and throat; and hygiene and medical jurisprudence.

Sec. 3. That an applicant shall before being permitted to enter upon an examination fill out an application blank, giving his name, age, residence, college and date of graduation (if a graduate), references and such other data as the State board of medical examiners may require. The applicant shall make affidavit that he is the person he represents himself to be and that he will faithfully observe all rules governing the examination. Any member of the State board of medical examiners, or the supervisor of examinations appointed by said board, is hereby authorized to administer the oath prescribed. The board shall have the right to refuse to examine a person whose reputation is such as to render him unworthy of membership in the medical profession.

Sec. 4. That when an applicant who has undergone examination shows such a standard of proficiency in the branches of medical learning enumerated in section 2 of this act as has been, or may be, fixed by the Medical Association of the State of Alabama, a certificate of qualification, in form to be prescribed by the said association, shall be issued to the applicant, which certificate shall entitle the holder thereof to treat any diseases of human beings he may be called upon to treat in accord-

ance with the teachings of the school or sect of medicine to which he belongs.

Sec. 5. That when an applicant states in writing that he does not propose to practice major surgery, said applicant shall be exempt from examination in said branch of major surgery, and should his proficiency in the other branches of medical learning named in section 2 of this act reach the standard established by the Medical Association of the State of Alabama, a certificate of qualification, in form to be prescribed by said association, shall be issued to him, which certificate shall entitle him to treat any diseases of human beings he may be called upon to treat in accordance with the teachings of the school or sect of medicine to which he belongs, provided that the holder shall not be entitled to perform the operations of major surgery, and that this restriction shall appear on the face of the certificate.

Sec. 6. That when an applicant fails to attain the standard of proficiency prescribed by the State Medical Association his examination shall be deemed unsuccessful. Such applicant shall, however, be entitled to another examination at any time after the expiration of six months from the date of the preceding examination.

Sec. 7. That a physician who receives a certificate of qualification shall, within ten days after locating in a county, file said certificate in the office of the judge of probate of such county for record, and should said physician remove his residence to another county he shall within said time have his certificate re-recorded. Any failure on the part of the holder of a certificate of qualification to comply with the provisions of this section shall render such certificate null and void.

Sec. 8. That the judge of probate of a county shall provide a blank book, of suitable size, to be called the "register of physicians," in which book shall be recorded all certificates of qualification filed by physicians of the county. The fee for recording such certificate shall be fifty cents. At some time between the first and tenth of January of each year the said judge of probate shall forward to the State board of medical examiners a full report of the names of all physicians, together with their post offices, whose certificates have been recorded in his office for the preceding year; and if any physician whose certificate was so recorded shall have removed from the county or shall have died the place

to which such physician has removed, if known, or the date of the death, as the case may be, shall be reported.

Sec. 9. That the State board of medical examiners may establish reciprocal relations with similar boards of other states in reference to the issuance of certificates of qualification, provided that such reciprocal relations shall not be established with the State board of examiners of any state that does not require examination upon substantially the same branches of medical learning as those enumerated in section 2 of this act, and does not maintain a standard of proficiency at least equal to that maintained by the State board of medical examiners of this State. When such reciprocal relations have been established a certificate of qualification may be issued without examination to a person who presents evidence that he has complied with the requirements of a reciprocating State board of medical examiners, provided that on the face of a certificate issued in accordance with this section it shall appear that such certificate was issued pro forma and without examination.

Sec. 10. That a physician who resides in an adjoining state, near the border of this State, shall be allowed the privilege of practicing in any county of this State into which his practice may extend without examination, provided that he hold a certificate of qualification from his own State board of medical examiners and causes said certificate to be placed on record in the office of the judge of probate of the county or counties in this State into which his practice extends, and provided further, that he shall not open an office, or establish a place, in this State at which calls may be left for him. A similar privilege shall be accorded a licensed physician of any state who may be called into this State in consultation with a physician, except that such consulting physician shall not be required to place his certificate of qualification on record.

Sec. 11. That the State board of medical examiners may issue to a surgeon, or assistant surgeon, of the United States army or navy, or of the United States public health and marine hospital service a certificate of qualification without examination, provided that such surgeon or assistant surgeon, presents to the State board of medical examiners a commission, or other satisfactory evidence, showing that he is a medical officer of the United States army, navy, or marine hospital service, as

the case may be, and provided further that upon the face of the certificate of qualification so issued, it shall appear that the certificate was issued *pro forma*, and without examination.

Sec. 12. That the State board of medical examiners is hereby empowered to revoke the certificate of qualification of any physician who uses intoxicating liquors, or drugs, to such an extent as to be thereby rendered unsafe or unreliable as a practitioner; or that of any physician who is guilty of immoral or unprofessional conduct; or that of any physician who induces, or aids in inducing, a criminal abortion, or a criminal premature delivery, in a woman, provided that the induction or abortion, or of premature delivery, when done for the relief of a woman whose life appears to be in peril shall not be deemed criminal; and provided further, that whenever possible the attending physician shall before performing such an operation call into consultation with him one or more other physicians.

Sec. 13. That whenever complaint, in writing, is made to the State board of medical examiners that a physician in this State has committed any of the offenses named in the preceding section (12), it shall be the duty of said board to summon such physician to appear before it for investigation of the complaint, provided that thirty (30) days notice of the nature and specifications of the complaint, and of the time and place at which the investigation will be made shall be given the physician against whom such complaint has been filed. When the investigation is held, which shall be conducted with as little publicity as possible, the person who files the complaint and the physician against whom the complaint has been filed shall have the right to introduce witnesses, or written testimony, or both and shall also have the right to be heard in person or by counsel, or both. For good reasons such investigation may be adjourned from time to time.

Sec. 14. That when the State board of medical examiners decides to revoke the certificate of qualification of a physician, it shall notify such physician of the order of revocation, and shall instruct the judge of probate of the county in which such physician resides to make an entry on the margin opposite to the recorded certificate of such physician to the effect that upon the order of the State board of medical examiners the certificate has been revoked, entering also the date of revocation. Any physician whose certificate has been ordered revoked by

the State board of medical examiners shall have the right of appeal to the State Medical Association, or to a court of competent jurisdiction, one or both, of which appeal such physician must give the State board of medical examiners notice within three days after having been informed of the decision of the board. When the State board of medical examiners has received notice of such appeal it shall await the result of the appeal before instructing the judge of probate to make the entry of revocation.

Sec. 15. That the State board of medical examiners shall have the right to issue, with or without re-examination, a new certificate of qualification to a physician whose certificate has been revoked whenever it deems such course proper and just.

Sec. 16. That all examinations under this act shall be conducted at Montgomery, and that the State board of medical examiners shall fix the times at which examination shall be held, provided that not less than two examinations shall be held annually.

Sec. 17. That the fee for an examination shall be fifteen dollars, which amount must be paid in advance of the examination and to such person as the board may authorize to receipt therefor. A fee shall not be returned to an unsuccessful applicant, but such applicant shall be entitled to a second examination without paying an additional fee, provided that such second examination is obtained within one year after the date of the first examination.

Sec. 18. That after defraying all expenses of holding an examination, such as furnishing blanks, paper, postage, certificates, the services of supervisors, clerical help, et cet., the remaining funds shall be equally divided among the ten members of the State board of medical examiners.

Sec. 19. That any person who treats, or offers to treat, diseases of human beings in this State by any system of treatment whatsoever without having obtained a certificate of qualification from the State board of medical examiners shall be guilty of a misdemeanor, and on conviction shall be fined for each offense not less than fifty nor more than five hundred dollars, and may be imprisoned for not less than one nor more than three months. A physician whose certificate of qualification is not on record in the county in which he resides shall not be

entitled to recover at law any compensation for services rendered in treating diseases of human beings.

Sec. 20. That the State board of medical examiners shall keep complete records of all examinations held by it, giving the name, residence, college and date of graduation (if a graduate), of each applicant examined, together with the results of such examination, which record shall be open to inspection. The said board of medical examiners shall also keep complete minutes of all its proceedings, which minutes shall be so preserved as to be easily accessible should occasion arise for referring to them.

Sec. 21. That nothing in this act shall prohibit the administration of domestic remedies in a family by any member thereof, or prohibit any person from rendering service to a sick or injured person in an emergency, provided that the person rendering such service does not pursue the occupation of a physician.

Sec. 22. That all laws or parts of laws in conflict with this act shall be and are hereby repealed.

Sec. 23. That this act shall go into effect on and after the first day of July, 1907.

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RESECTION OF THE STOMACH.

Dr. Haerting (Medical Society of Leipsic, November 6, 1906) presented a woman 49 years old, from whom he had removed about four fifths of the stomach for cancer, one and one-half years ago. Since then there has been no evidence of a recurrence, and the patient is now able to eat everything and has gained considerably in weight. In speaking of the prospects of success in operative work of this kind, Haerting mentioned that cases of gastric cancer, as a rule, do not consult the surgeon until about three months before death, and after they have suffered with the disease for at least three-quarters of a year. These figures are based upon the statistics of Kroelein, comprising 364 cases of gastric cancer, which had been treated or observed by him during a period of 21 years. According to Koertes' statistics relating to 126 cases of operation the duration of life after gastroenterostomy is prolonged from 6 to 9 months, the patients dying of general cachexia without the so distressing phenomena of pyloric stenosis. After resection of the stomach the prolongation of life has varied considerably. There have been cases which have remained free from recurrences for 4, 6 or 8 years, and therefore could be regarded as cured. The microscopical character of the tumor is of importance in the prognosis. If the cancer has not invaded the muscularis the prognosis is not bad, while if cancer cells have been left behind in the periphery of the wound death usually results in the course of a year from recurrence. Haerting is firmly convinced that if the cases are referred to the surgeon at the proper time the prognosis is much more favorable even than in cancer of the breast. The great obstacle to early operation has been the difficulty of making the diagnosis. The decrease or absence of hydrochloric acid, while of diagnostic significance in excluding gastric ulcer does not indicate a carcinoma. A condition generally found in the latter is a reduction of the total acidity of the gastric juice. The presence of a tumor is also not conclusive as to whether cancer exists and whether it is operable, nor can it be predicted before opening the abdomen whether gastroenterostomy or resection is indicated. As regards the operative mortality of gastric resection, this ranges from 25 to 40 per cent.; that of gastroenterostomy from 15 to 30 per cent.—Internat. Jour. of Surg.



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The Medical Association of the State of Alabama.

At the approaching meeting of the Medical Association of the State of Alabama at Mobile, we all anticipate a pleasant re-union of friends, a profitable exchange of ideas and experiences, and an enviable indulgence inhaling sea breezes, in the fruit of the South and the fish and oysters of the Gulf, and, best of all, in the warm, old fashioned, Southern hospitality that still adorns the hearts and hearths of the city by the Gulf.

But, unfortunately, we may also expect to hear a discordant note from the dissatisfied.

As far as it will concern our organization it will come from two classes of our membership almost exclusively. The first are those whose ambition for personal distinction, or recognition, obscures their judgment. The second class is composed of perhaps younger, perhaps newer members, who have not gone to the fountain head, that is, to the charter and constitution for their information and understanding relating to the construction, and actuating principles of our great organization.

With the most honest and praiseworthy motives they have listened to the complaints and abuse poured out, first by a few disappointed malcontents, and then repeated by their deluded followers—deluded because they have not examined the charter and constitution for themselves. There does not exist any large association of intelligent gentlemen in America without more or less divergence of opinion in the membership. In ours those who really favor any radical changes are comparatively few in numbers, though they make a great deal of noise. Yet every one of them who has tried, has repeatedly been heard by the Association, though his views may have been rejected by its vote after due and respectful consideration. It is idle for them to complain that they cannot be heard. Either parliamentary law or chaos must prevail, and if any speaker has not had enough knowledge of the laws of debate to gain the floor, he has shown what a mess he would make of a meeting if he were in control.

The fact is that too many of our members do not realize the lofty, grand, beneficent character of our organization, because they have not studied it. They are led to view it from faulty standpoints by listening to others no better posted than themselves, when our Book of Rules contains in simple detail a clear statement of every element in the magnificent structure. Indeed many think of the Association chiefly as a State Medical Debating Society, where the members can thank each other for their "very important and interesting papers," and show their brother doctors how much they know. This is all right, we all do it, and we all like it; but it is a very subordinate element among those which constitute the strength of the Medical Association of the State of Alabama, *the leading Medical organization of the world.*

Let us glance at a few of its principles which are most frequently attacked. First, some consider it a grievance that the charter allows only

one hundred counsellors. They think that the more populous counties should have more counsellors than the thinly settled parts of congressional districts.

What would be the result?

Soon the honor of counsellorship would degenerate into an advertizing competition among doctors in cities, and the body of one hundred faithful defenders of the organization would become an ever increasing lot of men seeking notoriety, until at last the Association would, in disgust, petition the Legislature to abolish the College of Counsellors, now our pride, but then our reproach.

Any considerable increase in the number of counsellors would come from the cities, thereby adding to the power of those who, through lack of information, hold in light esteem our very best, most unselfish and loyal element, the County Societies outside of large towns and cities, enabling them to change the principles of the organization at will, however repugnant the changes might be to the members at large. By their words and actions the advocates of increasing the number of counsellors have shown that they would not hesitate to establish a universal vote and a majority rule which would, inevitably consolidate all power in the hands of four County Societies, enabling them to so change our laws and regulations in their own interests that it would no longer be worth while for the other County Societies to send delegates. Under existing law the College of Counsellors stands on guard with brain and purse to protect the organization from the assaults of uninformed friends and secret foes, and membership therein is an honor to which every worthy member of any County Society may aspire. He who lives in the most remote district will, if worthy and ambitious, certainly receive the honor sooner or later, while, where the Society membership is more numerous, it is their privilege to present for nomination the names of those they deem most worthy. But in the latter case surely constant scoffing at, and hostile criticism of an organization which has achieved for the medical profession and the people more than any other medical organization in the world, is a poor foundation on which to base a claim for advancement on the road to its highest honors!

It is not to its detractors, nor yet to those who would uproot the very principles upon which its usefulness and success are based, that the future destinies of the Medical Association of the State of Alabama

should be confided. This organization is built for the centuries, not for the temporary advantage of ambitious men striving to use it for their own elevation.

Another source of complaint is that each county society can have only two voting delegates in the meeting of the Association.

"It is undemocratic! One member should be as good as another! Every doctor ought to be allowed to vote!"

Such are the catchwords used by friends of the organization who have not analyzed conditions and results.

Let us consider this matter.

What great organization exists wherein every member has a vote in the meetings of its central legislative assembly? Do we not send representatives to congress or the legislature to speak for us, vote for us, and protect our interests? Would any one of us, unless elected to do so, expect to vote on the various measures because we happened to be present?

Would it be wise to pass laws under which a few societies, by secret agreement, would be able to swamp a meeting of the Association with voters, thereby carrying measures or electing officers obnoxious to a large majority of the county societies? Should Birmingham and Montgomery and Mobile be able, once and forever, to override the medical wishes of all the rest of the state, because their *voting* strength could be assembled at small expense, while the outlying county societies could not afford to send to the Association enough of their members to outvote even the members of any two of those large societies? Yet all of these unjust things would at once be possible if every member were given a vote in the Association. It is useless to say men would not take such an unfair advantage. They would! And would feel more than justified whenever impelled by passion or fanaticism. Therefore the wise head that planned, and the cool judgment that has carried on our organization, has never lapsed, the first from insisting upon, the second from maintaining this vital principle.

Has not this same provision, controlling the voting strength of the United States Senate, saved the weaker states from oppression by the stronger many a time? Was it not this provision for the equalization of power that enabled our immortal Morgan, aided by a few staunch friends, to protect every Southern voting precinct from the intima-

tion and contamination of a squad of negro troops at every congressional election? Do we not know, all of us, that but for this provision calling for two delegates from each county society to express by their votes the will of that Society, instead of allowing every member from everywhere an equal vote, we would long ago have degenerated into the average medical debating society, more or less scientific and more or less political in its aims? Perhaps some good friend may say, "Well, and why not? What better could we have?" Rather let us ask, what else have we got? Well, to a very gratifying extent we already have the scientific element in our Association. Who that has read that epochal masterpiece, the Jerome Cochran Lecture of 1896, delivered by Dr. Joseph Collins, of New York, and the other papers and discussions printed in the Transactions of last year, can deny this statement? But, as valuable and as important as that feature of our work may be, it is utterly insignificant in value and importance as compared with two other objects accomplished more or less perfectly by the organization, namely, the elevation of the standard of medicine in Alabama by withholding the right to practice from those who were incompetent; and the establishment of a complete, thorough, detailed public health organization, backed by the purse and sword of the state, ramifying from the capital to the remotest hamlet, ready at a flash from the electric spark to spring, fully armed and equipped for duty, to any point threatened with invasion by epidemic disease.

When war was declared by France against Germany, Von Moltke, roused from midnight slumber and told the pregnant fact, said to the orderly, "Take the third portfolio from the top on yonder desk, and deliver it at once to General Blank." Then he went to sleep again while the organization he had perfected sprang into activity, and all night long brigades were moving, railroad trains were rushing, men alone, by twos, threes or tens were hastening through forest, across fields, along roads to join their commands. The borders were ready, and no hostile foot trod German soil save as a prisoner.

Today if yellow fever, cholera, or bubonic plague threatened us from any direction, from within or from without, the State Health Officer, whoever he might be, could send three or four telegrams starting the proper town or county health officials to work, and in one hour the necessary machinery, long since prepared for such emergencies, would

be in motion. Every line of approach, from the bridle trail to the trunk railroad line would be guarded; and though in past years some critics have sneered at our quarantine work, and pronounced it "inefficient and farcical," the ready answer is that in the several years of its employment in Alabama, not once has a suspected or infected case slipped into the state without detection and provision against damage to the state.

Thus our organization examines into the qualifications of would-be practitioners and says yea or nay, and few are the mistakes it has made, though our enemies have made the most capital they could out of these few.

It protects the state from epidemics and the consequent paralysis of business and enormous financial loss.

It helps to keep out charlatans and advertising quacks, and though not entirely successful it still hinders hundreds of conscienceless adventurers every year from coming here to prey upon helpless credulity and ignorant superstition.

It furnishes a prompt agency for calming uncalled for fears and showing people how to protect themselves from real dangers. It stimulates our doctors everywhere to get together in their county societies and compare notes, thus proving a great educational and social agent.

Through the county health officers which our county societies elect we influence county authorities in all matters pertaining to hygiene or disease and persuade them to adopt proper sanitary measures.

We even influence the legislature, man by man, to favor public health measures for the welfare of the people.

Thank God the doctors of Alabama have never yet asked for a law that will give them a business advantage over any other profession, trade or calling.

Are not such aims, such objects, such achievements as worthy of our approval as the purely scientific work of the organization? Do they not touch an hundred interests where our didactic efforts reach one?

Is there any adequate reason why we should hazard this great power for usefulness by subjecting the organization to the formless whims of idealists who do not understand the grand principles on which it is based? It is easy to cry "wolf" and scare children. It is good politics to shout "ring" and rouse unjust prejudices.

But we have reached the age of manhood. We have watched the work of the Association for years; have never seen it wrong a human *being*, however it may have disappointed osme; have witnessed the steady rise of the standard of examinations; have seen the Association halls filled with men of whom any organization should be proud, men reared and educated in medicine under our auspices; have seen our state year after year stand serene, safe and uninfected when epidemic disease surrounded us on every side; have seen each problem met and grappled with as it rose, and wisely solved by the Association, till, like many other thoughtful members, we have come to believe that an organization so beneficent, so successful, so admired, should be changed if changed at all, only after careful and thorough study conducted by many unbiased, judicial minds. Even now we have not "let well enough alone." The County Boards of Examiners are practically abolished. They have done a noble work. Not two per cent of those examined by them has broken his word and gone into practice in a county other than that of his examination. What other trade, profession or business can show a larger percentage of honorable fulfilment of obligations? And the records of examinations during the first years of their existence, compared with those of their last years, show a degree of advancement far greater than that shown in the same time by the medical schools that graduated them.

But the County Boards are gone. Now let us wait a few years and note the result before starting in to tinker any more with our organization.

The Bill to Regulate the Practice of Medicine in Alabama.

We have read with a great deal of interest the bill to regulate the practice of medicine in Alabama, now pending in the Legislature, a copy of which appears in full in another part of the Journal. We desire to express in the strongest terms our full and unreserved endorsement and hearty approval of all of its provisions. It is unquestionably a wisely framed and timely bill and one which should pass, and we earnestly hope that all members of the profession in the State who believe in the elevation of the standard of admission to practice will read

it carefully and give it their earnest support and use every means to further its passage. It will be remembered that at the last meeting of the State Medical Association the question of the abolition of the County Boards of Medical examiners came up for discussion and it was definitely decided that the time had come for this to be done and that if the way seemed clear such a bill would be introduced and strong effort made to secure its passage. We desire to congratulate the State Board of Censors for this evidence of good faith in carrying out the expressed wishes of a vast majority of the members of the Association.

The State Board of Censors acting as a State Board of Medical Examiners have unquestionably been very efficient and faithful in the discharge of the important and responsible duties imposed upon them and we are pleased to give the Board full credit for the good work which it has accomplished in the past. However, the Board has been more or less handicapped in carrying out the law regulating the practice of medicine on account of the want of uniformity and varying standards maintained by the County Boards.

Undoubtedly there was wisdom in the organization of the County Boards, and while we are free to admit that the work which has been done in many of the counties has not been above criticism, and while there has been a gradual improvement in recent years in all of the counties, there are many good and sufficient reasons why all applicants for the practice of medicine should be examined by one central examining board who will maintain a uniform standard. We have not the space to discuss the many advantages a State Board, suffice it to say that all applicants will stand on the same footing and all local influences will be entirely eliminated. Under the former system applicants for license have occasionally gone into a county where there was a low standard required by the County Board and as soon as license was secured moved into a county which had a higher standard and which the applicant could not reach. Under the provisions of the bill now before the Legislature this practice will be no longer possible. The County Boards in the beginning served to maintain and foster many of the interests of the local profession in each county, and it was deemed best to give each county power to grant license to practice within its borders. This privilege has been in some instances abused and in our opinion the

County Boards of examiners have ceased to be useful and should be abolished.

If we as a profession hope to keep abreast of the progress which is being made in elevating the standard of admission to our profession we must insist upon better qualifications for physicians who propose to practice in the State.

Before the time the law establishing the county boards went into effect our State was filled with ignorant and incompetent practitioners. There was practically no effort made to determine the qualifications of doctors. As a matter of fact all who desired to secure license could do so by simply registering with the probate judge by the payment of a small fee. Many of the counties had no medical organization and there was practically no protection to the public against incompetent men, quacks and pretenders. It remained for the fertile brain of Dr. Jerome Cochran, who was a genius for medical organization to frame and put into operation the law establishing the County Boards and defining their duties. He finally perfected a complete medical organization in the State which has for many years been regarded, and justly so, as one of the best and most complete systems ever formulated. All honor, we say, to the memory and to the genius of the man who first conceived and planned an organization which at the time it was promulgated had not a superior or an equal throughout the length and breadth of the land. But times and conditions have changed, and in our opinion the time is at hand for the passing of the County Boards acting in the capacity of medical examiners, and we rejoice that the prospects are bright for the passage of the bill to which we refer.

A close analysis of this bill will disclose the fact that it is a fair and equitable bill giving equal rights to all classes of physicians and none need complain that it is framed for the protection of any particular school of medicine. All who propose to practice the healing art by any system are placed upon an equal footing and are required to undergo the same examination embracing subjects upon which every doctor should be informed, whether he be homeopath, osteopath or what not. It will also be noted that the bill provides for the revocation of license of physicians who are habitual drunkards, drug habitues, abortionists, or those proven guilty of gross immoral conduct. This provision we regard as one of the most important in the bill, and should receive the support of all who desire to see only clean and pure men

in our profession. Let us not hesitate to work for the bill and use our best efforts with the members of the Legislature to secure its speedy enactment.

It is to be regretted that there has been a disposition in some quarters to criticise or find fault with the present method of conducting examinations by the State Board, but we have failed to hear advanced a single valid argument which cannot be shown to be based either upon prejudice or ignorance of the law as it has been administered. In this connection we desire to emphasize the fact that too much credit cannot be given to our able and efficient Health Officer and Chairman of the State Board for the great work which he has done in the past, and which he is still doing, a work which has been accomplished under many difficulties and with poor financial support. To him we are indebted for much valuable legislation affecting not only our health laws, but other matters of far-reaching and beneficent effort. We desire to remind the profession that he has been inadequately paid for these valuable services, and would suggest that, in view of the increased appropriation made recently by the Legislature, that his salary be raised to a figure commensurate with his great ability and the work which he has done for so many years. At the approaching meeting at Mobile let us give him our unqualified support in all his efforts to promote the best and highest interests of our profession in the State.

Personal Notes.

Dr. J. S. McCants, of Talladega, went to Rochester, Min., on the 19.

Dr. J. S. Williamson, of Coaleanor was a visitor in the city on March 15th.

Dr. E. P. Pruitt, of Oxmoor called recently and left his subscription for the Journal.

Dr. W. C. Williams, the President of Shelby County Society, was in Birmingham on business on the 19th.

Dr. J. F. Jenkins, of Piper, a leading physician of Bibb County called at the Journal office during the month.

Dr. W. H. Hutchinson, of Childersburg, Talladega County, spent a couple of days in the city on business during last month.

Dr. C. S. Strock, of Pelham, was in the city recently on business and had his name added to our subscription list.

Society Reports.

THE JEFFERSON COUNTY MEDICAL SOCIETY, REGULAR MEETING HELD FEB. 25, 1907.

The President, Dr. B. L. Wyman in the chair, Dr. A. F. Toole, Secretary.

After reading the minutes of the last meeting the following papers were read, viz: Diagnosis of Non-tubercular Diseases of the Lungs and Pleura, by Dr. R. M. Cunningham, (See Original Com.); Pathology, Symptoms and Treatment of Pleurisy with Effusion. (We regret that our stenographer failed to get this paper.—Ed.) Dr. H. S. Ward; and Surgery of the Lungs and Pleura, Dr. E. P. Riggs (See Original Com.)

DISCUSSION.

In discussing these papers, Dr. J. M. Mason said:

The chief reason that surgical intervention in diseases of the lungs and pleura has not kept pace with surgery of other regions, is that there is great danger of acute collapse of the lung whenever the pleural cavity is freely opened. When this accident happens, there is grave embarrassment of circulation and respiration, and death frequently results. The accident will not occur in case the lung is adherent to the chest wall, as is the case in most inflammatory conditions, or if the lung has been previously slowly compressed by the gradual accumulation of fluid or air.

Just why sudden collapse of the lung should cause such grave symptoms is not thoroughly understood. An early theory was that oxygenation or haematosiis was interfered with on account of the sudden loss of the aerating area of the collapsed lung. Experiments on dogs by Mayo, have shown that three-fourths of the entire lung surface may be excised and still there will be no interference with aeration of the venous blood. From these experiments, it has been concluded that this is not the proper explanation.

Others, among them John B. Murphy, consider that the symptoms are due to displacement of the mediastinum through pressure changes.

Still others think there is a suppression of centripetal impulses or impressions, due to the immobilization and compression of the lung.

That is to say, the medullary centers presiding over the circulation and respiration are not stimulated to the performance of their function, and there is a cessation of heart action and of respiration.

It has been observed that the size of the pleural opening and the suddenness of the lung collapse determine the gravity and urgency of the symptoms, and a consideration of this fact has been the basis of some of the operative measures which have been resorted to to prevent the occurrence of sudden collapse.

To cause slow collapse of the lung, preliminary to operations inside the pleural cavity, the cavity has been injected with water, air, hydrogen and oxygen. This is carried on slowly, and after the lung has been compressed, the cavity is opened and treated, after which it is closed and the fluid or gas is aspirated.

These methods are of historic interest principally, and are not of great practical value.

There are two mechanical devices, based upon directly opposite principles, which have for their object the prevention of acute collapse of the lung. One attempts to increase the positive pressure inside the lung, thereby preventing its collapse when the chest wall is resected; the other attempts to bring about a negative pressure on the outside, by operating inside a closed cabinet in which a partial vacuum has been produced.

In the first method, the Fell-O'Dwyer apparatus, and other instruments on this order, are used. The Fell-O'Dwyer apparatus consists of a small bellows, of about the capacity of the normal lung. To this is attached a rubber tube with a tip somewhat like an intubation tube. The tip is inserted into the larynx, and when the chest wall is resected the bellows is worked and the lungs are kept distended with air and collapse is prevented until the operation is completed.

The other method, that of securing negative pressure outside the chest is obtained by use of the Sauerbruch cabinet.

This consists of an air tight cabinet of about 14 cubic metres size, in which the operator and patient are placed. The patient's head is outside the cabinet, so that the normal pressure is maintained inside the lung. A partial vacuum is secured inside the cabinet, and the lung does not collapse when the chest wall is opened.

On account of the impracticability of these devices outside the

largest medical centres and hospitals, they are not very often used, though their more frequent use would allow much more extensive explorations inside the chest.

Delageniere has devised a surgical procedure which is practical, and which is based upon the fact, already mentioned, that the symptoms of collapse of the lung are not so marked and so dangerous if the air is let into the lung very slowly.

He makes a U shaped incision into the axilla of the side upon which the operation is contemplated. The 8th, 9th and 10th ribs are resected without opening the pleura. The pleura is then opened by a very small incision. A small amount of air is allowed to enter. After any symptoms due to this admission of air have subsided, another small amount is admitted, and the procedure is continued until the lung has collapsed. Then, if the operation has been successful in allowing the lung to collapse without producing dangerous symptoms, the pleura is widely opened and the necessary operative work carried out, after which the chest wall is closed and the air removed by aspiration.

The inrush of air in this operation can be controlled by packing, by catching and closing the edges of the pleura by forceps, or by catching the lung and suturing it to the chest wall, thereby preventing its retraction.

This operation, and the devices spoken of for preventing collapse of the lung, do not, of course, apply so much to operations upon inflammatory conditions of the lung and pleura as they do to non-inflammatory diseases, such as new growths of the lungs, pleura, or chest wall. In the inflammatory troubles, the lung is almost always more or less adherent, and, frequently, already compressed from effusions, so that the danger of acute collapse is not great.

In resections of the chest wall, where the lung is not adherent, either for the purpose of operating upon the lung, the pleura, or the chest wall itself, or in any operation where the unattached lung is likely to be exposed, some of the measures for the prevention of acute collapse must be made use of to render your work safe.

I have had the opportunity of seeing the chest wall extensively resected for sarcoma of the ribs and pleura, where the Fell-O'Dwyer apparatus was used with complete success. This operation was performed

by Dr. F. W. Parham, of New Orleans, and has been reported in the International Text Book of Surgery, and also, I believe, in the transactions of the Southern Surgical & Gynecological Association.

An excellent review of this whole subject is to be found in a recent number of Surgery, Gynecology & Obstetrics in an article by Tait, of San Francisco.

Dr. H. E. Pressly said:

I had hoped that Dr. Riggs in his "branching" would discuss lung traumatism, and especially injuries followed by active bleeding into the pleural cavity.

Take for example a case that comes in with gunshot or stab wound of the chest and a pleural cavity full of blood. There are three procedures open to us:

1. The waiting policy.
2. Aspiration or drainage.
3. A radical operation with attempt to control hemorrhage by catching the point or packing.

The waiting policy is apt to result in a streptococcus or staphylococcus empyema, to say nothing of a crippled lung from prolonged pressure or of a displaced and embarrassed heart. Though in moderate hemorrhages it certainly is the best method of treatment.

Aspiration or drainage is apt to lead to a recurrence of the bleeding and death from hemorrhages.

In some cases I believe that the radical operation is indicated, I have recently lost three cases from prolonged hemorrhage after drainage, and this too even though operation was delayed in each case for from ten to thirty days.

Dr. Robert Dawson and Miss Theresa Mushat, both of this city were married at the home of the bride on April 3d. Dr. Dawson is a prominent young physician of Birmingham and his bride a very popular young lady of the city. The Journal extends best wishes.

Dr. J. F. Alexander, of Blocton, the President of the Bibb County Medical Society, was in the city recently and called at the Journal office.